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Przemysław Skulski
Mariusz Filipiuk

T-34/76

Camouflage & Markings

MMP

Green Series No 4105

Przemysław Skulski
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THE T-34/76 TANK
CAMOUFLAGE AND MARKINGS

STRATUS

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Table of contents

Introduction 3
T-34 history of the design 4
Camouflage and marking 12
USSR 12
National markings and emblems 25
T-34/76 examples of tactical markings 26
Air identity markings 30
Tactical markings 32
Individual names and propaganda slogans 46
T-34/76 in Foreign Service 47
Czechoslovakia 47
Finland 49
Germany 52
Yugoslavia 58
East Germany 60
Poland 61
RONA/ROA 69
Romania 69
Hungary 70
Italy 71
In detail 74

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On title page: *A T-34 with hexagonal turret from an unidentified unit, spring 1943. Note the tactical marking 300M.*

Introduction

The T-34 medium tank is surely one of the best-known Soviet weapons of the Second World War. At the same time it is a vehicle which gives rise to much controversy. For some (including General Guderian, who wanted Germany to build T-34 copies!) it was the best medium tank in service during the years 1941-1945, ideally suited to the capabilities of Soviet industry and to the standard of training of the Red Army soldier. Others have compared it unfavourably to its contemporaries, such as the M4 Sherman and Pz.Kpfw. V "Panther" (though the Panther was a much heavier tank, comparable to the Soviet KV-1) suggesting it was sparsely equipped and poorly built. The arguments as to how good the T-34 really was will surely never end, but its influence on all subsequent tank designs is clear.

However, doubts arise not only regarding the development history and the combat deployment of this design. There are questions also over the colours, finish and tactical markings employed on the T-34. It is to these questions that this present publication is devoted. This is an attempt to present the colours and marking of tanks used not only by the Red Army but also by Czechoslovak, Finnish, Yugoslav, German, Polish, Romanian, Hungarian and Italian forces. Being aware that it has not been possible to conclusively settle many questions, the present authors express the hope that their work will facilitate a better knowledge of the T-34/76.

A T-34 on display at Munster Museum. It is an ex-East German tank featuring post-war modifications (toolboxes, notek light).

(GP)

T-34
HISTORY OF THE DESIGN

In the autumn of 1937, the Design Bureau at Plant No. 183 in Kharkov (the Kharkov Tank Plant – ChTZ) received an order from the Armoured Transport Authority of the Red Army (ABTU RKKA) for a new wheel-and-track tank which was to be successor to vehicles of the BT range.

Work on the new tank was assigned to a team of designers headed by A.J.Dik. In the design, use was made of experience acquired during modernisation testing of the BT tanks (including the BT-SV, which had angled armour plating in the tank body). In May 1938, the new tank, which had been designated the A-20[1], was shown to the USSR Defence Committee. The vehicle weighed 18 tonnes, was armed with a 45mm gun and two 7.62mm machine guns and powered by the V-2 diesel engine of 450 hp. Armour plate thickness was between 10 and 20mm. In the light of experience gained in the use of tanks in the Spanish Civil War it was decided that the wheel-and-track running gear arrangement was complicated and not very efficient. Accordingly, the designers devised a new, exclusively tracked vehicle designated A-20G (the name being later changed to A-32). This vehicle had an outline similar to that of the A-20 but it differed considerably from its predecessor, being armed with a 76.2mm gun[2] and two 7.62mm type DT machine guns, while armour plate thickness was 1 - 32mm. Here, too, power came from the V-2 diesel engine. The running gear featured an additional pair of wheels.

In the summer of 1939, testing of both prototypes (the A-20 and the A-32) started, initially at Kharkov and subsequently at Kubinka, near Moscow. In autumn 1939 it was decided to suspend work on the A-20 and shortly afterwards M.Koshkin and A. Morozov proposed an updated A-32 which featured thicker (20-35mm) armour plating and an L-10 gun of 76.2mm. This tank, designated A-34, won the approval of military representatives. Certain changes were made, involving a further increase in armour plate thickness

An early T-34 captured by the Germans, summer 1941. This is the rarely encountered version with cast turret and L-11 gun. (PS Coll.)

1 According to several sources, the project was initially designated BT-20.

2 The second prototype was armed with a 45mm gun.

(to 45mm), the L-11 gun which had a somewhat longer barrel, plus updated observation and aiming devices.

In December of 1939, the Defence Committee took the decision to accept the new tank into Red Army service under the designation T-34. Just as in the case of many other Soviet armoured vehicles, at the time of this decision the tank existed only on paper.

The decision to start production of the T-34 came towards the end of March 1940 and three months later it began at Plant No. 183. The first series-produced T-34 models reached Red Army combat units in Autumn 1940. These vehicles were informally designated "T-34 Model 1940"[1].

By the end of 1940, the Kharkov Plant had made 117[2] of the new vehicles out of a planned total of 150. At the same time, preparations were put in hand to start up T-34 production at the STZ plant in Stalingrad.

Deployment of the vehicles in front-line conditions showed them to be short on development in many respects. There were so many shortcomings that guaranteed service life was reduced from 3000km to 1000km. Marshal G.I. Kulik even ordered the suspension of the tank's production, but this did not in the end happen. The voices of criticism, however, did bring about the development, in spring 1941, of a new, improved tank which was given the designation T-34M. It was laid down that it should have a different form of hull armour, a new turret with observation cupola, running gear with smaller-diameter road wheels (six per side), modified suspension and an engine of 600hp output. The list of improvements to be made on the basis of clearly stated requirements of the military was fairly lengthy and was evidence that the T-34 tank project was founded on success, but the actual vehicle was under-developed. In May 1941 the idea was even mooted of halting T-34 production and replacing it with the T-34M. But at that time the Defence Committee ordered an increase in T-34 production with gradual updating of the model. The fortunes of the T-34M, meanwhile, were to be dependent on the results of comparative testing of experimental models. Matters never progressed so far, however, and following the outbreak of war with Germany the T-34M project was cancelled.

As the result of initial testing, various modifications were introduced into the T-34 tank's structure. The most important of these affected the design of the turrets and also its armament. As early as the second half of 1940 preparations had been made for the simplification of turret production. The first T-34 models had turrets welded-up from rolled plate pressed cold to the required shape. This technology was very difficult and labour-intensive. At the Mariopol' Metallurgical Works a new, simpler turret was developed – one cast and welded-up from two parts. Another of its advantages was thicker armour (52mm). The first cast turrets were fitted to series-produced T-34 models at the turn of 1940/41. But production volume for these turrets did not increase until nearly the end of 1941 when the Kharkov Tank Plant [ChTZ] was evacuated to the Urals [3]. In the course of production, modifications were made to the cast turrets concerning the number and type of observation and aiming instruments, a rear access hatch (some turrets did not have this at all) and the design of the upper hatch. Changes came also as a result of the fact that production of the T-34 and its sub-assemblies was taken over by new factories which employed somewhat different technologies. It should be added here that production of welded-up turrets went on in parallel, including the tanks made at STZ (Stalingrad) where they were employed until mid 1942.

From March 1941 a start was made on fitting new F-34 guns of 76.2mm calibre and with a longer barrel than that of the L-11 (41.4 calibres instead of 30.5). Interestingly, the project for the fitment of a new gun to the T-34 was ready even earlier under the aegis

1 Informally, because all tank versions with 76.2mm guns were called T-34 by the Russians.

2 Including two prototypes.

3 Following its transfer to the Urals, Plant No.183 came under the "Stalin" Ural Tank Works - UTZ

An early T-34 with F-34 gun (cast turret). The state of the tank indicates that it was one of many vehicles abandoned by Red Army soldiers at the beginning of the war with Germany. It can be seen that the vehicle has a single colour (4BO Olive green) and no tactical markings whatsoever.
(PS Coll.)

of P.Muravyev, who was working in the design team of V.Grabin at Plant No.92 at Gorkiy. Despite favourable test results, the decision to fit F-34 guns on series-produced tanks was not made for many months.

However, these were not the only modifications made in T-34 production. The introduction of the various improvements was an on-going process and the list of modifications proved to be long (on the average, 3500 changes were made every year!).

They resulted as much from front-line and production testing as from problems with materials. The following should be numbered among the most important modifications:

- the use of new tracks of 550mm width, ensuring better traction;
- change in the design of the driving sprocket and idler (no rubber rims);
- the development of a new type of road wheel with what was known as internal damping. Production of these required considerably smaller quantities of rubber which was in short supply (the idea originated at the STZ (Stalingrad) where mixed-type wheels were often employed, e.g. three inner roadwheel pairs of steel while outers had rubber rims);
- the introduction of a new design of driver's hatch with two periscopes;
- additional armour for the front machine gun;
- change in the shape of the hatch in the rear armour plate (e.g. at the front the rivets were removed and at the rear the characteristic rounded joints of the hull armour plating disappeared);
- modification of the observation sights;
- change in the shape of the engine air intakes.

The improvements were introduced at various plants, at different times and to different extents, dependent on the manufacturers' capabilities and those of their co-operating enterprises and parts suppliers. Hence, tanks built during the same period of time often differed in detail from one another. For this reason, the features defining various models could be misleading. Additionally, modifications were introduced which were typical of only individual manufacturers. For example, the welded turret with simplified gun protection was made by No. 264 Plant for the Stalingrad Tank Works (STZ). Additional characteristic features of the vehicles from STZ were:

Internally damped road wheels, somewhat differently designed sprockets and idlers, a different design of turret and "grooved" jointing of the hull armour plates.[1]

1 This jointing method for hull armour plates was used also at Plant No. 112 in Gorkiy.

Early T-34 models (in the foreground, a tank with welded-up turret and new type of hatch for the driver-mechanic) from 5th Tank Regiment, commanded by Major M.P.Baranov. This unit was fighting in the Crimea area in autumn 1941. The tanks have uniform olive green paint scheme with no tactical markings.
(PS Coll.)

Another interesting solution employed by various manufacturers was additional up-armouring of the T-34. Special screens were mounted, mainly on the glacis plates but also on the turrets. This solution was adopted at plants in Gorkiy, Stalingrad and in the Urals. The method of mounting the additional armour varied somewhat and this makes it possible to identify where the so-called "add-on" T-34 models were produced.

A vital moment in the history of the T-34 was the adoption, in early 1942, of the automated welding method devised by E.O.Paton of the Electric Welding Institute. This afforded not only better-quality jointing of armour plate but also (perhaps more significantly) a much higher rate of output (a ten-fold increase over manual welding). An essential feature was also the considerably lower skill levels required, which permitted the employment of lower-skilled labour. To a great extent it was thanks to this method that such large quantities of T-34s were produced (more than 35,000).

From more or less halfway through 1942 new hexagonal turrets (other descriptions include "nut-shaped") were fitted. The turret was designed by M.A.Nabutovskiy, who took as his pattern the design used on the T-34M. It was a cast turret of simpler

A T-34 tank (made by STZ) from the Polish 1st Armoured Brigade. The white eagle painted on the turret is plainly visible. No other markings.
(ZL Coll.)

design, suitable for mass production. A characteristic feature was the two circular hatches which, in the open position, were somewhat reminiscent of ears. (The Germans called tanks with this type of turret "Mickey Mouse"). Dependent on the technological capabilities of the individual production works, there existed three basic variants of these turrets differing in the following design details:

- turret with a plain bottom edge;
- turret with the typical cut-out at the rear of the bottom edge;
- a rarely-encountered version of the pressed turret (the so-called cast turret [moulded-foremka as it was called] developed at the UZTM Works (Urals Heavy Engineering Works).

The first two versions of the turret appeared in several different variants but the most essential differences between them concerned the turrets' outline, the number of cast components which made up the turrets, the strengthening components (notches) on the lower portion, pistol ports, and the lifting hooks or for the employment of various observation and aiming instruments.

On-going changes were made to the T-34 at the turn of 1942/1943. These concerned primarily the propulsion system. A new clutch was fitted together with a five-speed gearbox. Starting in January 1943, new "Cyclone" air filters were fitted to replace the "Pomon" type which performed poorly, causing various types of engine failure.[1] As a result of the changes, better exploitation of the engine's power was achieved, resulting in improved performance. They also had the effect of increasing the service life of the power unit. Other changes brought in at the time featured an increase in the capacity of the main fuel tanks plus the fitting of auxiliary jettisonable fuel tanks mounted on the rear of the tank hull (initially of box section on the rear of the tank but later cylindrical and fitted to the hull sides). There was also an increase in the amount of ammunition carried.

Modernisation process continued in 1943. From about the autumn the turret began to be fitted with observation cupolas for commanders (a change already proposed in the T-34M project). The armour plates on the front of the vehicle and the turret armour as well were thickened (to 70mm). T-34/76 models from the final period of production

1 Americans testing the T-34 maliciously asserted that the "Pomon" filters were the result of sabotage.

A destroyed T-34 with early type of hexagonal turret.

(ZL Coll.)

A T-34 with hexagonal turret of early type. Seen at the T-34 museum near Moscow. (TS)

also featured a modified shape for the front of the hull (sharp, not rounded). Since by this time the rubber shortage had become less severe, rubber-rimmed wheels were once again employed. At the same time, new patterns of cast road wheels featuring strengthening ribs and holes were developed.

Over the years 1941-1943 many vehicles were based on the T-34 tank. One of the most interesting was the "tank destroyer" (tank-istrebitel), which had fitted in its standard turret the 57mm ZiS-4 anti-tank gun. Despite its reduced calibre it had greater armour-piercing capability. Work on such a vehicle had begun before the outbreak of war. There is a lack of reliable data as to when series production began and how many tanks were made. According to some sources only about 40 vehicles had been made at Kharkov by September 1941[1]. In the summer of 1943, consideration was given to renewing production of the "tank destroyer" fitted with the ZiS-4m gun mounted in hexagonal turrets. Although data can be found that about 150 such vehicles were made at Nizhniy

A Soviet unit on exercise during the period preceding the Battle of Kursk, spring/summer 1943. This was most probably the brigade commanded by Major V.V.Yablokov. Notable are the various types of turret (hexagonal, cast) and the different roadwheels. Only one vehicle has a tactical number – 3. (PS Coll.)

1 Some sources have it that not a single T-34 with 57mm gun had been made at Kharkov by the time of the evacuation. But somebody must have made some of the vehicles by autumn 1941, since by October they were equipping 21st Armoured Brigade.

Tagil it appears that only an experimental series of a few tanks materialised[1]. In the face of plans to arm the T-34 with an 85mm gun, the "destroyer" project was dropped.

The command version received the designation T-34K (K for *Komandirskiy*).

Over the period 1942-1944, some 195 commander's T-34/76 models appeared, differing from the standard vehicles in their more powerful radios (RSB) and a smaller ammunition supply. On the other hand, the designation OT-34 was given to a tank with an AT-42 flame-thrower mounted on the front glacis plate on the mounting for the DT machine gun. In all, 1,170 such vehicles were produced. Tanks equipped with mine-clearing rollers type PT-3 were called IT-34 (IT for engineer tank). The T34 chassis and running gear were also used as the basis for tank-recovery tractors (T-34T) and bridge-laying tanks (TM-34).

In all, over 35,000 T-34 tanks with the 76.2mm gun were produced over the years 1940-1944. Among the six works producing vehicles of this type, the greatest number, over half, were made at Plant No. 183 in Kharkov and at Nizhnyy Tagil.

A T-34 on display at the museum in Poznan's citadel. This vehicle is what is known as a "mongrel" – its hexagonal turret was made at Plant No. 183, while the hull was produced at STZ Stalingrad.

(PS)

1 At least three such vehicles reached combat units.

A pressed turret (the so-called moulding procedure - formoczka developed at the Urals Heavy Engineering Works UZTM) on a tank kept at the Vojenski Technicki Muzeum at Lesany, near Prague. (MB)

T-34 tanks with the 76.2 mm gun Tank Production

Plant	1940	1941	1942	1943	1944	Total
No.183 Kharkov (KhTZ)	117	1560	-	-	-	1667
No.183 Nizhnyy Tagil (UTZ)		25	5684	7466	1838	15013
STZ Stalingrad	-	1256	2520	-	-	3776
No.112 Gorkiy	-	173	2584	2962	557	6276
ChKZ Chelyabinsk		-	1055	3594	445	5094
UZTM Sverdlovsk	-	-	267	464	-	731
No.174 Omsk	-	-	417	1347	1136	2900
Totals:	117	3014	12527	15833	3976	35467

Source: M.Baryatinskiy, *The T-34, Best Tank of World War II*. Emsko, Moscow, 2006

CAMOUFLAGE AND MARKING

USSR

The prototypes of the A-20, A-20G and A-32 tanks, and also the first T-34 models supplied for testing, were finished in an overall olive green colour. Series-produced models were also painted overall olive-green, which bore the name "protective green" and the designator 4BO. This paint, and in principle its base pigment, was made in paste form which was then diluted with a solvent, usually petrol. Since the pigment was made by various manufacturers (at least three different chemical works) and additionally different amounts of solvent were added when the paint was applied, the resulting colour shades differed markedly from one another.

In 1939, on the basis of tests carried out at the Armoured Plant Scientific Research Institute (NIIBT), multi-colour camouflage patterns were developed. Three colours served as base colours. These were olive green (4BO), dark brown (6K) and black (6RP)[1] They could be supplemented by other shades, such as light brown 7K, and a sand colour[2].

The adoption of the following colour schemes was suggested:

- Painting of vehicles with patches of the colours olive green, dark brown, sand and light brown;
- Tanks camouflaged in the colours green[3] and light brown.
- The painting of tanks with two-tone camouflage schemes, comprising patches of brown[4] and sand.

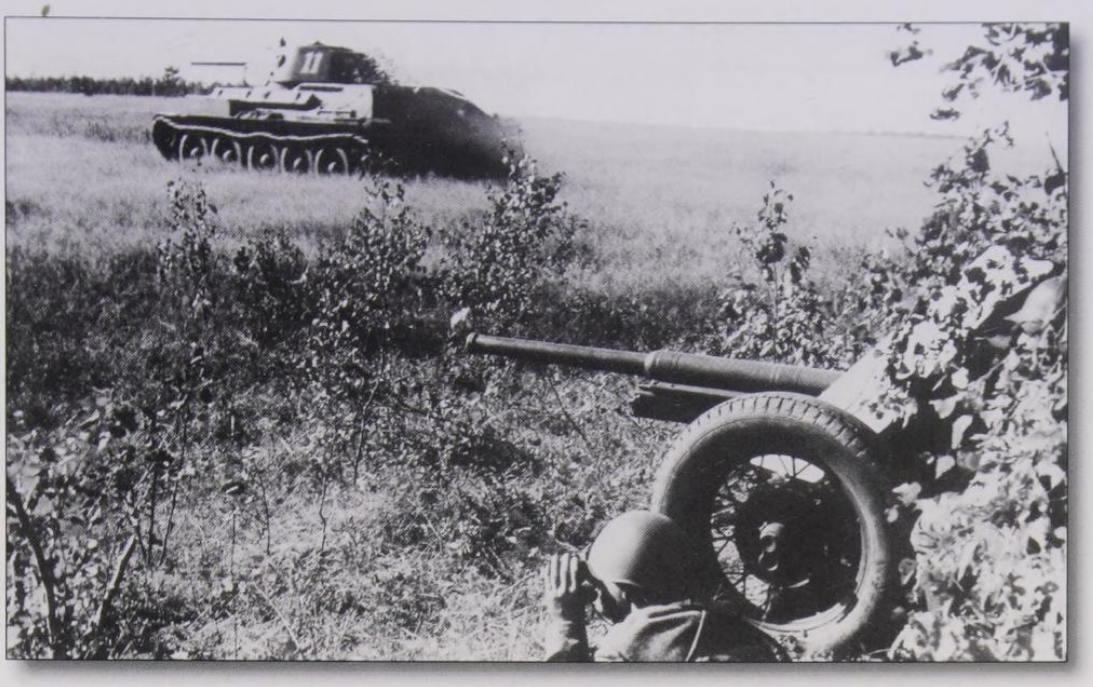
A prototype A-32 tank (the first version with the L-10 Gun), Summer 1939. The whole tank painted in olive green (4BO).

1 The black was to serve as an alternative shade to dark brown

2 There are doubts regarding the names and designators of certain colours. Even in Russian sources there is no unanimity in this regard. The colour designated 7K can serve as an example: some sources have it as a yellowish-brown shade, while for others it is a sallow-yellow shade. We take 7K to be a light brown shade.

3 It is difficult to identify precisely the colour concerned. In Russian literature it is described as the colour green with a sea-green tint.

4 This colour is difficult to identify precisely. Is it brown or what? We can only conjecture that the colour was a shade between light and dark brown

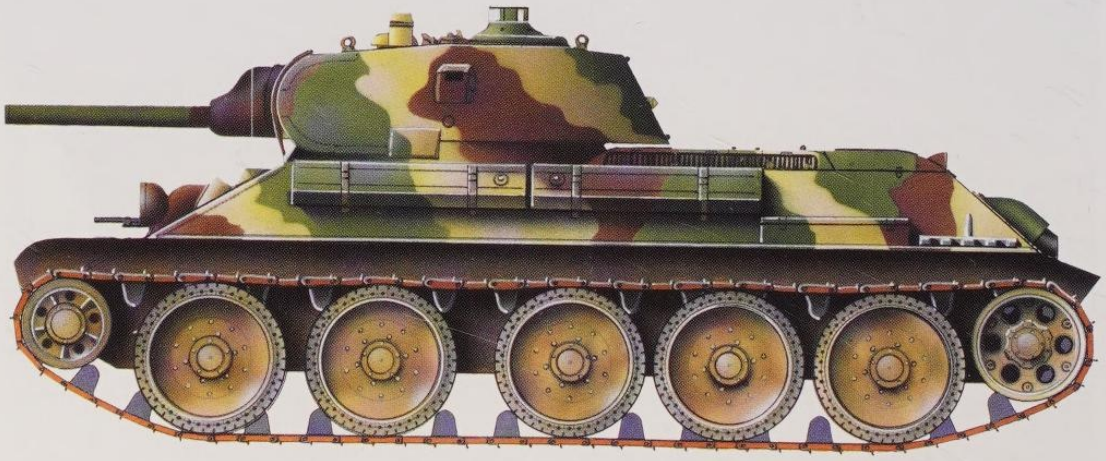


An early production T-34 (welded turret, fuel tanks on the hull) with the white tactical number 11 on its turret, summer 1941.
(PS Coll.)

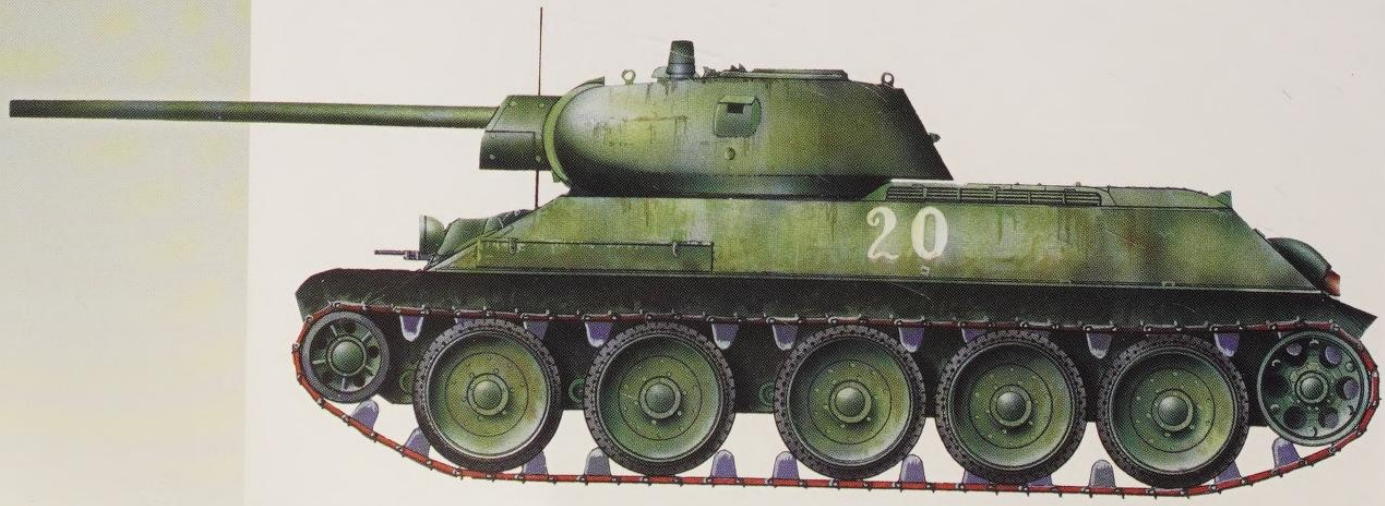
Soviet units on the attack, summer 1943. The vehicle in the foreground has non-typical and complex tactical markings. The figure 2 in the hexagon denoted the unit, 7th Detachment, while 1 was the tank's individual number.
(PS Coll.)

A wrecked T-34 (hexagonal turret) with the name "Parkhomenko", 1942. The tank is painted uniform olive green.
(PS Coll.)

A prototype A-34 tank on test at Kubinka, Spring 1940. All the vehicle's surfaces are painted olive green (4BO).



An early-series T-34 (welded-up turret and L-11 gun) in three-colour camouflage. South-Western Front, Summer 1941.



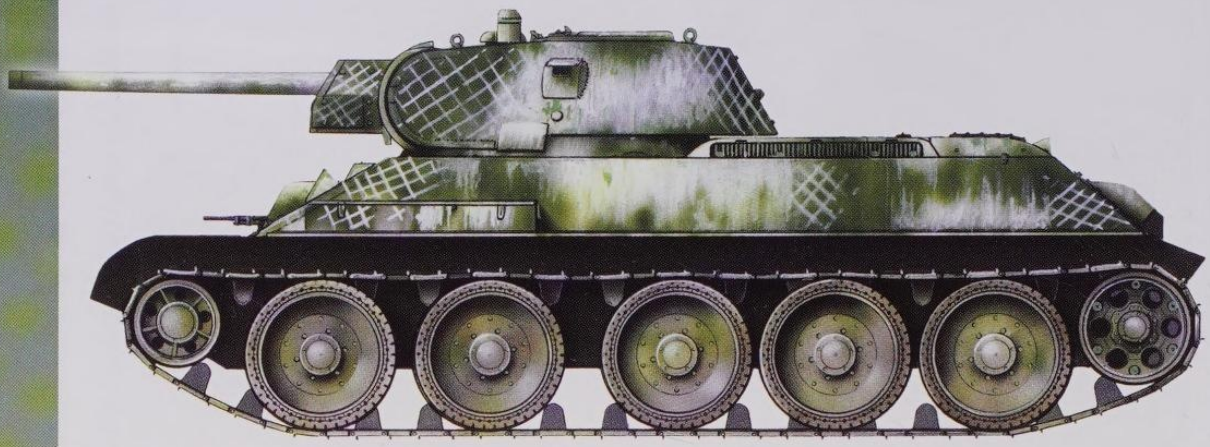
A T-34 tank destroyer with 57 mm gun, 21st Armoured Brigade, October 1941. The tank having the number 20 on the hull belonged to the unit commander, Hero of the Soviet Union, Major Lukin. All surfaces of the tank painted olive green.

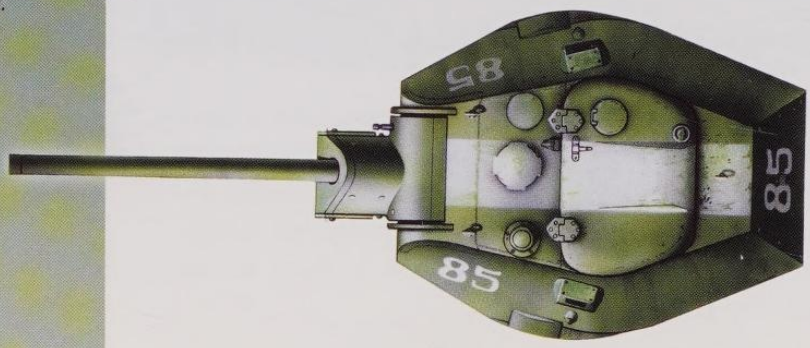
Tank destroyer T-34/57 from 21st Armoured Brigade, October 1941. The vehicle with the white tactical number 20 on the hull belonged to the unit commander Major Lukin. This tank was destroyed in the Turginovo area. *(UA)*

The principles were to link specific camouflage patterns with the operational areas of armoured units. It was a question of adapting the type of camouflage to the climatic conditions and vegetation in the various areas of the USSR. It was recommended also to preserve set proportions in the use made of the individual colours. It appears, though, that in actual practice multi-colour camouflage was applied to only a small number of Soviet tanks, including a small quantity of T-34s.

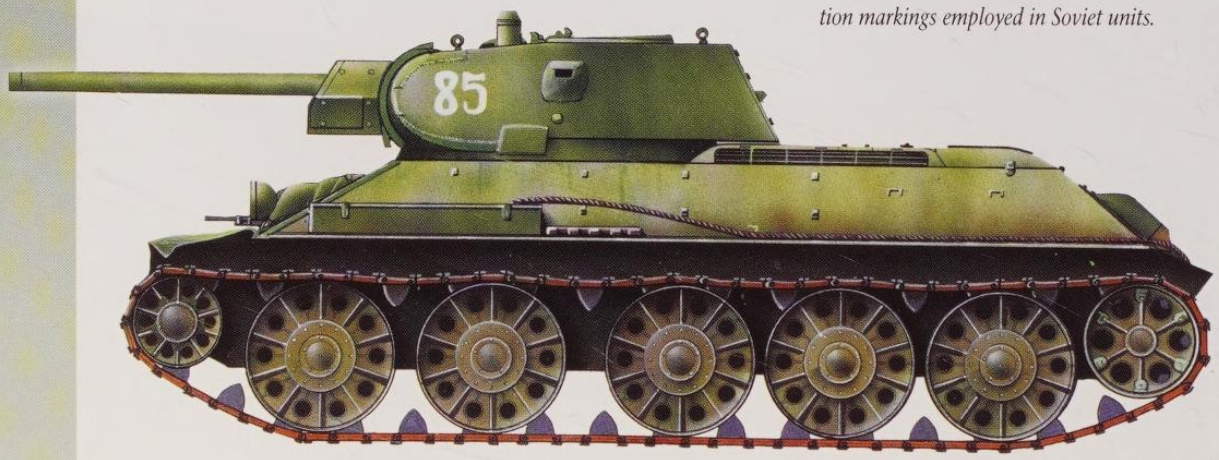
A T-34 from 52nd "Red Banner" Armoured Brigade, Caucasian Front, 1942. Note the two-colour camouflage and the tactical marking – a diamond with a light-coloured (probably white) interior and the Figures 2 and 2 inscribed in it. *(UA)*

An early-series T-34 (welded-up turret and F-34 Gun) from 1st Guards Armoured Brigade. Western Front, Moscow area, turn of 1941/1942. This vehicle has the Winter camouflage typical of this unit and this period (known as "Winter Forest" or "Grid Camouflage" simulating tracks in the snow).



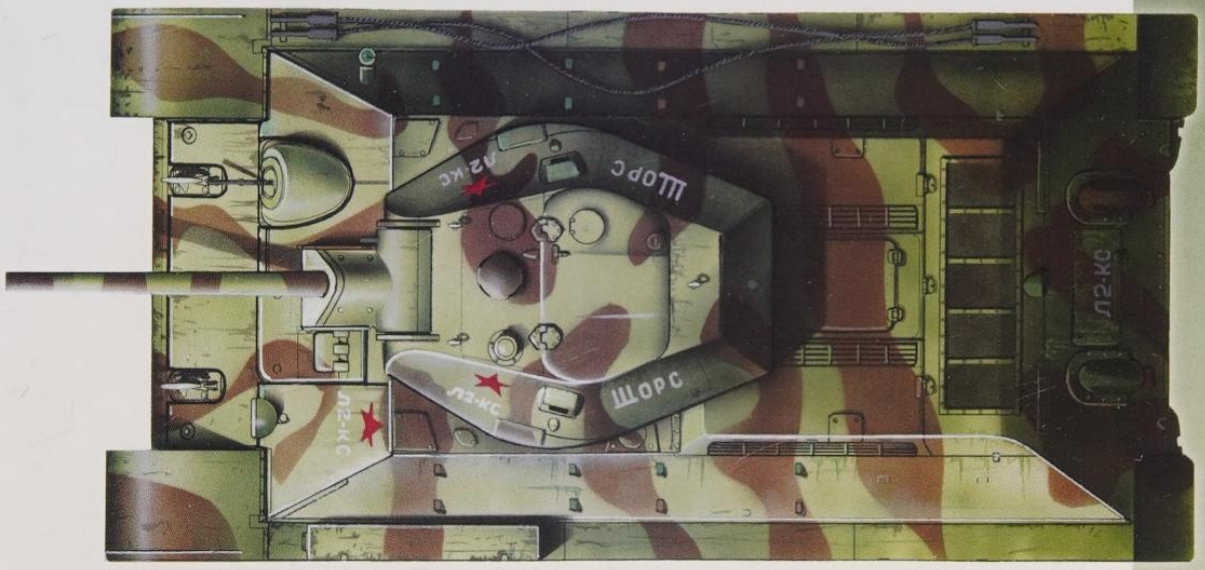


A T-34 produced at STZ (welded-up turret) from an unknown unit. Western Front, Spring 1942.
The turret of a tank numbered 85 with a white band for identification by aircraft. This was one of the commonest identification markings employed in Soviet units.

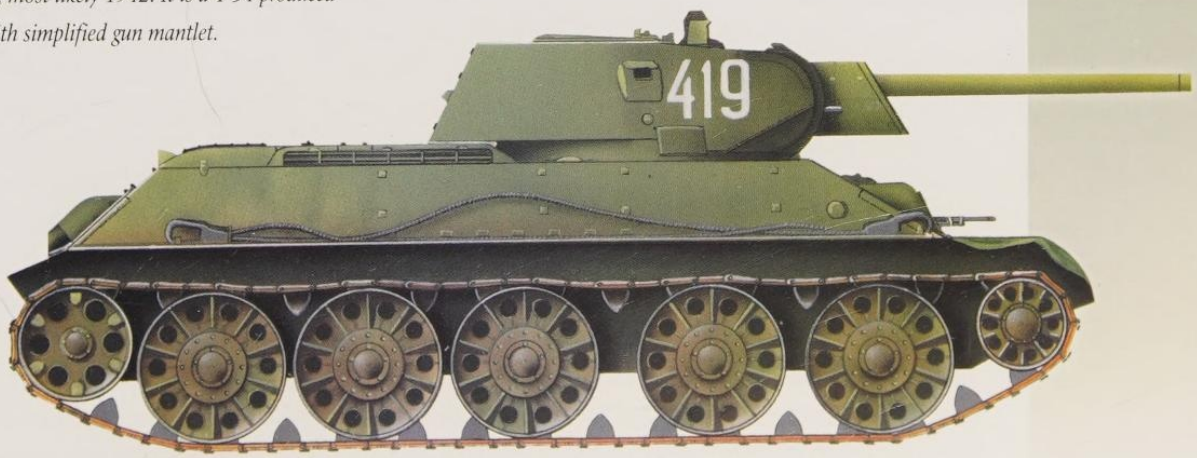


A "Parkhomenko" T-34 of 2nd Battalion, 116th Independent Armoured Brigade. Western Front, Spring 1942. The whole tank painted in olive green (4BO).

A T-34 made by STZ (welded turret) of 130th Armoured Brigade, Southern Front, Kharkov area, Spring 1942. There was additional armour on the glacis plate. Also characteristic of this unit was two-colour camouflage and also non-typical tactical markings L2-KS, plus names originating from those of heroes of the civil war – in this case Szczors.



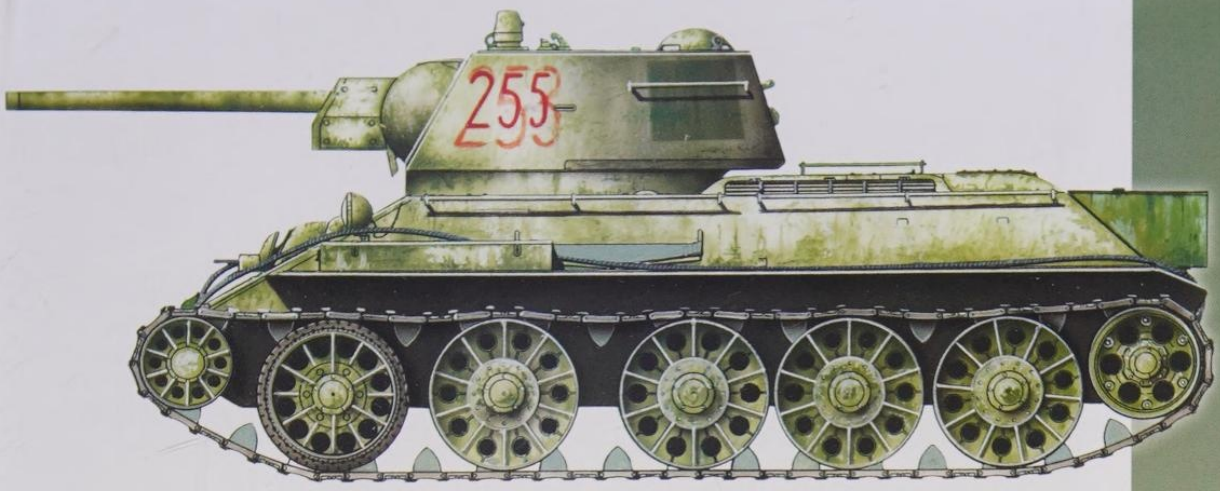
A tank with the white number 419, from an unidentified unit, most likely 1942. It is a T-34 produced by STZ with simplified gun mantlet.



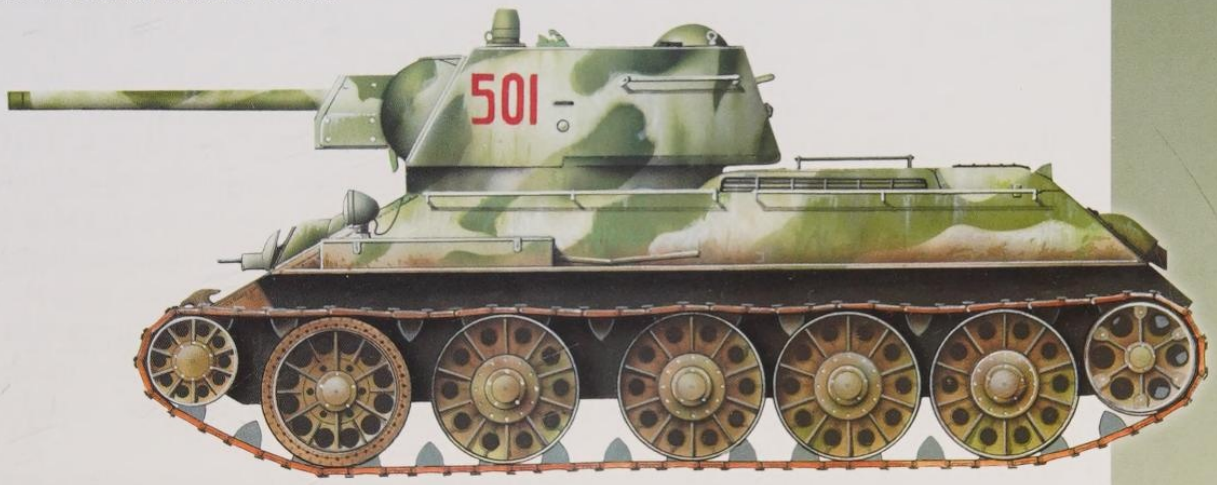
A destroyed OT-34 (the late production version from the end of 1943 or early 1944), at the turn of 1944/1945. The tank is olive green. The tactical marking S-6 (in Russian C-6) is visible.
(Stratus Coll.)

An OT-34 from 15th Guards Mechanised Brigade, 3rd Ukrainian front, 1944. This tank has the tactical number 101, while the swallow was the Brigade's symbol (painted also on the gun mantlet). The open loader's hatch is white, indicating that there is an identification mark for air forces on the turret roof – most likely a white circle.
(PS Coll.)

An example of multi-colour camouflage is the three-colour scheme which consisted in covering tanks with patches of olive green (4BO), dark brown (6K) and light brown (7K). A number of tanks belonging to (among others) 4th and 15th Mechanised Corps which operated in the summer of 1941 in the Western section of the USSR were so painted. Worthy of note here is that this camouflage was not to be found on the list of protective colourings recommended by the NIIBT as the result of testing in 1939. From where did it come, then? Some sources suggest that this camouflage was brought in at the beginning of 1941, while the employment of the colours mentioned above came about primarily as a result of the fact that at the start of the 1940s the Soviet chemical industry was only able to supply paints in colours such as olive green, dark brown and light brown. Problems with regular supplies were definitely a sore point for the whole of Soviet industry but the proposition of non-availability of colours other than those three mentioned



A T-34 with hexagonal turret, most probably from 2nd Guards Mechanised Brigade, the South-Western Front, Operation "Little Saturn", November – December 1942. The tank is in Winter camouflage, while the green unpainted squares were an identification marking during "Little Saturn" (they were also located on the rear of the turrets). Below the tactical number 255 in red the old number 253 is visible.



A T-34 with hexagonal turret. 152nd Armoured Brigade, Leningrad Front, February 1944. This tank has smart Winter camouflage: white camouflage patches have been applied on top of the main colour (the olive green 4BO shade).

The T-34 tank "Sergei Kirov" with hexagonal turret from 30th Guards Armoured Brigade, Leningrad Front, Autumn 1943. The whole tank was painted olive green (4BO). Typical of this unit was the positioning on the turrets of Red Stars, Order of Red Banner emblem and names.

A T-34 (made by STZ) in two-colour camouflage from 130th Armoured Brigade, spring 1942. This tank had the name "Ordzhonikidze" on its turret. On the rear plate of the hull the marking L2-KS is visible, this being the code of that unit.

(PS Coll.)

would not appear to be very likely. The black colour, after all, was in wide application in the USSR both in the civilian branch (e.g. the motor industry) and in the military branch (for camouflage of T-28 tanks or the painting of Soviet aircraft). A more likely explanation is the fact that three-colour camouflage was acknowledged to be the most suitable for units stationed in western areas of the USSR.

By the end of 1941, when the problem of camouflage painting was tackled again, the above-mentioned three-colour pattern appeared in an Instruction prepared by the ABTU. It contained the recommendation to employ for the purpose of camouflaging military vehicles precisely those colours – olive green, light brown and dark brown. It was laid down that the colour olive green must occupy 45-55% of the tank's surface, dark brown should occupy 15-30% and light brown should cover 15-30%. Attention was paid also to the arrangement of the camouflage patches, which were designed to blur the outline of the tank (e.g. the line of the colours must not run parallel to the vehicle's outline and the camouflage patches must not be symmetrical). There are only a few examples

One of the most controversial T-34 tanks- a wrecked vehicle made by STZ, probably from 5th Armoured Army, Bryansk Front, Summer 1942. The tank is painted uniformly in olive green but the colour of the markings is very variously interpreted. It appears, though, that the number 07, the star and the inscription "for Stalin" are of the same colour, red.

(UA)

A burnt-out T-34 with welded turret, made by Plant No. 183, Dnepropetrovsk area. The date of the photograph is noted by the Germans as September 1943. On the turret is visible the number 363XX which was applied by the Germans. In another photo of this tank taken earlier (probably in 1941) no markings at all are to be seen, while the tank itself is shallowly "buried" in the ground.

(PS Coll.)

of three-colour T-34 camouflage over the years 1942-1945. They appeared on a few tanks from 164th Armoured Brigade (Kursk area in 1943) and from 4th Guards Tank Army (Lvov area, 1944).

There can be no doubt that the main colour employed by the Russians for the T-34 throughout the war consisted of overall olive green. Of course, there also appeared two-colour patterns, but these belonged to a true minority. This type of camouflage consisted of patches of camouflage in light or dark brown, or more rarely sand, applied over the standard olive green. It emerges that the definitions Spring and Autumn camouflage which appear in various studies refer in fact precisely to camouflage using light and dark brown patches.

Here it must be stated that in the analysis of photographs from the period extreme care must be taken. It seems that various kinds of damp patches or repainting which appear on the T-34 are frequently interpreted as camouflage markings. Repainting is always found on armoured vehicles in service in wartime conditions. This was aggravated by 4BO

A T-34 destroyed in the Belgorod area, late autumn 1941. It is difficult to make out the remains of the tactical markings. It appears that there was a large figure 1 (or a strip) with two smaller figures behind it.

(PS Coll.)

Tanks of 130th Armoured Brigade, spring 1942. The two-colour camouflage and tactical markings are visible. The second vehicle bears the name "Szczors".

(PS Coll.)

paint being not of the best quality and by the effect of Russia's severe climatic conditions. The matter would be clarified by colour photographs, but very few of these are available from the Eastern Front battles (and most were taken by Germans).

Nor can extreme cases be ruled out featuring a total lack of any protective colour. Data of this kind are found relating to the vehicles made in Stalingrad during the siege of 1942. Indeed, many T-34 tanks reached combat units directly from their production line, but on the basis of photographs it is difficult to state unequivocally whether they were painted or not[1].

In the winter, T-34 tanks were painted with white removable paint or with white-wash. Removable paint was produced in several variants, such as the so-called 'B' type

Head-on collision between a T-34 and a StuG III self-propelled gun, November 1941. Note the tactical number 4 on the hull. Another point of interest is the rarely-encountered type of tracks developed for the T-34M.

(ZL Coll.)

1 Interestingly, a similar problem appears in the final weeks of war.

paint or distemper paint. Sometimes whole vehicles were painted white, other times only white patches or strips were applied (their shape was very varied). An interesting pattern for winter appeared at the turn of 1941/42 on T-34 tanks serving in the 1st Guards Armoured Brigade and also in 4th and 11th Armoured Brigades. The tanks were painted white, but upon them were strips with a pattern depicting ruts appearing in the snow. This camouflage was made using special grids which served as stencils. For this reason it was sometimes known as "grid camouflage".[1] An interesting feature is the fact that this type of painting originated at the end of the nineteen thirties. According to some sources, the Russians acknowledged this type of painting to be the best winter camouflage but its drawback was that it was highly labour-intensive. In the later stages of the war these paint patterns essentially disappeared.

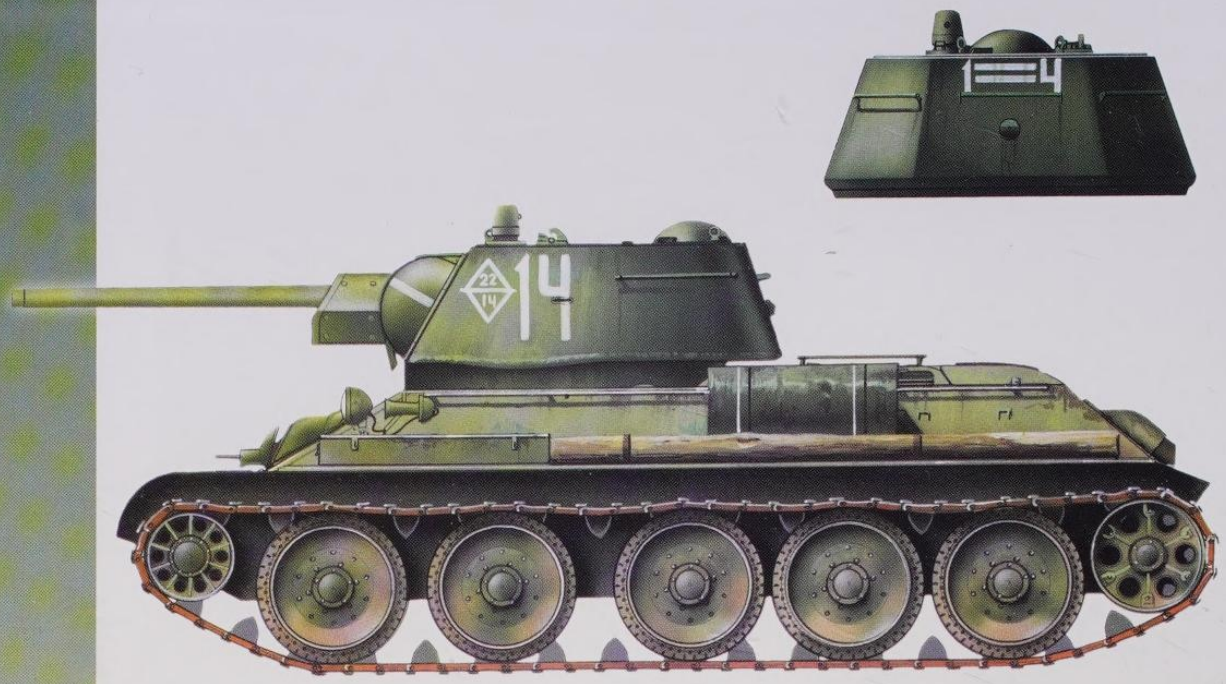
A T-34 with pressed turret and two-colour camouflage – sand-coloured patches applied on olive green base. The white number 228 appeared also on the rear of the turret. Leningrad Front, September 1943.

(UA)

Attack by tanks of 13th Guards Mechanised Brigade (a square with 7 inscribed in it), 4th Guards Mechanised Corps, 3rd Ukrainian Front, summer 1944. In the autumn new tactical markings in the form of animals were applied. In 13th Guards Mechanised Brigade it was the stag.

(PS Coll.)

1 It can also be encountered with the name "Winter Forest"



A T-34 (with hexagonal turret) from 22nd Armoured Brigade, 6th Armoured Corps, Summer/Autumn 1943. The whole tank is painted olive green (4BO). Worthy of notice are the tactical markings – an oblique band on the gun guard, a diamond with the numbers 22 (the brigade marking) and 14 (the tank's code number). The tank's number was repeated on the side and rear of the turret. On the rear of the turret, though, the numbers 1 and 14 were divided by two horizontal lines. It can be assumed only that this denoted that the vehicle belonged to 2nd Platoon.

The T-34 tank "Leningradets" with hexagonal turret from 30th Guards Armoured Brigade, Krasnoye Selo, Leningrad Front, turn of 1943/1944. Tank is in white Winter camouflage. It can be seen from this profile that the turret hatches and ventilator were dark-coloured. This may suggest that the turret roof was in olive green or that an identification marking was located on it. The coloration of the tactical number 116 is difficult to establish with certainty. According to some sources, the number was black, although on the basis of photograph analysis it appears to have had the same colour as the stars, i.e.red.

NATIONAL MARKINGS AND EMBLEMS

On Soviet military vehicles the nationality marking, as in the case of aircraft, was the Red Star. At the same time, though, it was used relatively sparingly. Most frequently, the stars were located on the turret sides. However, photographs survive of vehicles that carried stars painted on the front of the hull or even ahead of the gun mantlet. In many publications colour plates may be found which show T-34 tanks with a white star, not a red one. Indeed, in some historical photographs the stars are very light-coloured, but it is difficult to find a logical explanation of why they might be white. It appears more likely that in the course of service the red pigment faded. Much depends, too, on the type of photographic materials employed (orthochromatic film, for example, or the filters used).

Another feature typical of the Russians was to paint Guards emblems and Orders of the Red Banner on tank turrets. Of course, this applied only to units which either had the status of a Guards Unit or had been awarded the Medal of the Red Banner.

Various versions of T-34 tank in winter paint scheme, 1942/1943. The first tank on the left has the number 214, the second has a number on the single hatch cover (plus remnants of a propaganda slogan on the turret), while the remainder do not appear to have any tactical markings. Such situations occurred very frequently in Soviet units.

A T-34 in a factory workshop, turn of 1941/1942. This shows the characteristic winter camouflage used by the Russians in the winter of 1941/42. It is possible to come across its various names – "Winter Forest" and "Grid Camouflage". It is clearly evident that the white had not been applied to the wheels.

T-34/76
examples of tactical markings

1st Battalion, 116th Independent Armoured Brigade, Western Front, Spring 1942

1st Battalion, 3rd Guards Armoured Brigade, Kalinin Front, Spring/Summer 1942.

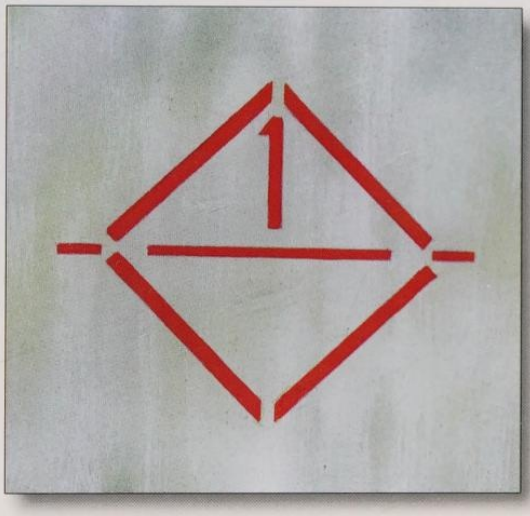
48th Independent Tank Regiment, Leningrad Front, Karelia Inlet, Autumn 1941.

51st Independent Tank Regiment, 1943.

An unidentified unit, Kharkov area, Spring 1942.

An unidentified unit, turn of 1942/43

The turret of a tank from 112th Armoured Brigade in winter paint scheme with the inscriptions "Marshal Czojbalsan" (Tchoybalsan) and "Revolutionary Mongolia". It has been claimed that the upper inscription was in black while the lower one was red, but when examining this photo it appears that both were in the same colour, most likely red.
(PS Coll.)



1st Guards Armoured Brigade, Moscow region, Winter 1941/42.

Unidentified unit, Stalingrad region, Summer 1942.

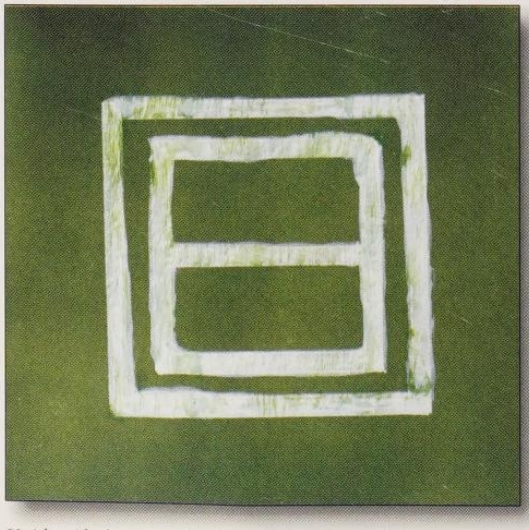
22nd Armoured Brigade, 1943/44

17th Guards Armoured Brigade, Orel region, 1943

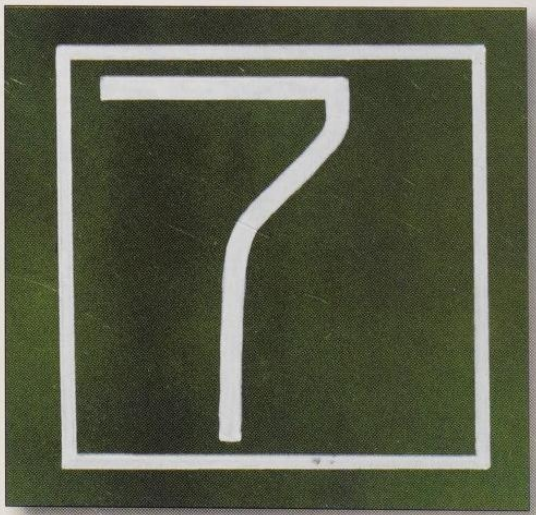
Tanks from 1st Armoured Brigade in the "Winter Forest" paint scheme. Winter 1941/1942.

90th Armoured Brigade, Stalingrad Front, Autumn 1942.

An unidentified unit, Ukraine, March 1944.



Unidentified unit, Steppe Front, 1943.



13th Guards Mechanised Brigade, 3rd Ukrainian Front, Romania, Summer 1944.

T-34 tanks made by STZ in winter camouflage, photographed at the town of Izyum (south of Kharkov), early 1942. The first vehicle has interesting inscriptions on the turret. To the left was written "for the Homeland" and on the gun shield "Forward". On the right hand side was the inscription "Death to the Occupiers". These inscriptions were most probably in red. On the open hatch cover of the turret can be seen an identifying band, the colour of which is difficult to determine precisely – is it olive green or red?

(UA)

A T-34 with hexagonal turret in Winter camouflage. Note the tactical number 13 (probably in red) placed in two positions on the turret.

A T-34 (with pressed turret and commander's cupola, most probably made at No.112 plant), unidentified unit, Riga area, Summer 1944. Note the tactical numbers located on the turret (sides and rear) and on the front of the hull. On the turret roof was an identifying sign for the Air Force, a white ring. The machine gun had no armour guard, though on the front of the hull an armour plate had been welded, which indicates that the vehicle had undergone repair.

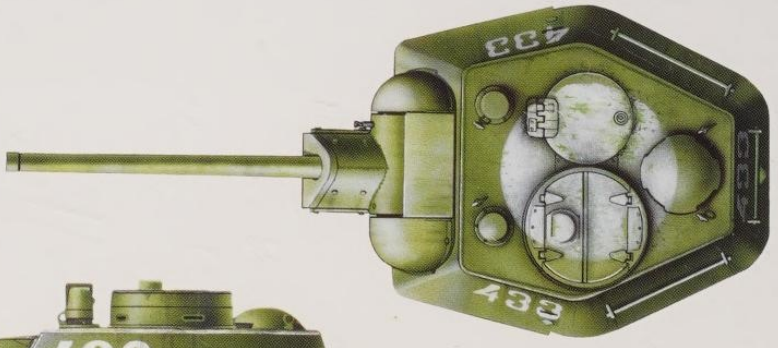
AIR IDENTITY MARKINGS

Air identity markings were in use by the Russians long before the outbreak of war with Germany. They were employed as early as the nineteen thirties during manoeuvres and also at the time of the invasion of the Baltic countries in 1940 (white crosses were painted on the turrets).

Air identity markings appeared on T-34 tanks from practically the start of fighting with the Germans in the summer of 1941. In the initial period of the war there was usually a white band running along the centre of the tank's turret, i.e. along its axis. Such identifying bands were used on various fronts in the later stages of the war too. Additionally there appeared other identification marks – white triangles, circles, squares and crosses and also bands (transverse relative to the turret axis). Sometimes the interior of the white triangles was painted yellow or had red circles. The markings were located as a rule on the roof of the turrets. On tanks which were in winter camouflage the relevant surface was left unpainted (the identification marks being olive green) or else they were painted in red.

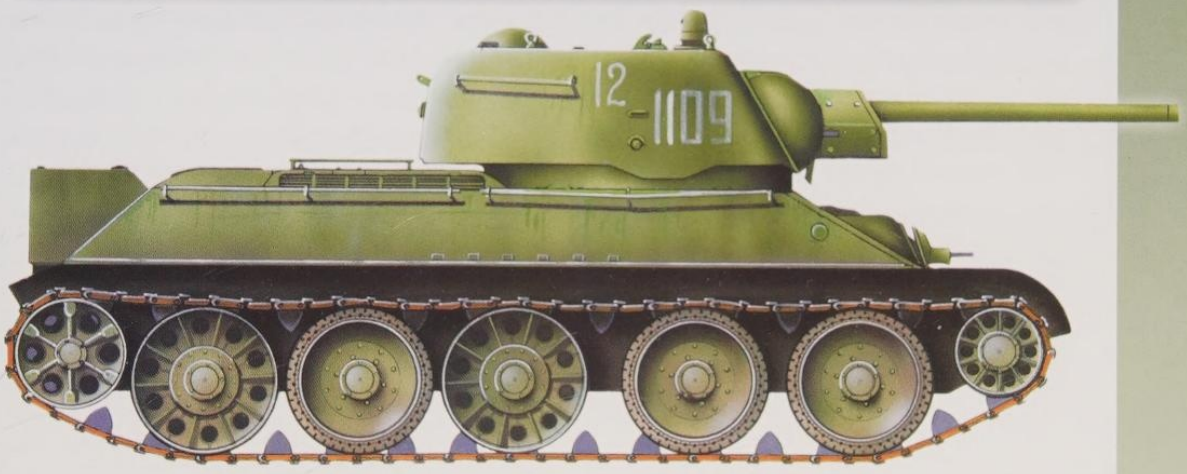
In many cases the use of identification marks was linked to specific operations. Examples we could mention would be the white circles painted on turret roofs as used during the Baltic countries offensive in 1944, and in the offensives in Yugoslavia in 1944. During the storming of Berlin in April/May 1945 white bands were painted on the tank turrets, white triangles being added subsequently. During the "Little Saturn" operation (on the South-Western front, November/December 1942) there were left unpainted squares in olive green colour on T-34 turrets (on the top and on the sides) amid the winter camouflage.

In addition to this, some units used identification markings for ground units. As a rule these were bands on the turret sides or on the hull. Usually they were white in colour, although there are photographs known of tanks carrying bands of other colours on their turrets (probably red).



A T-34 with hexagonal turret in winter camouflage, photographed in Austria in May 1945. Visible on the turret are the inscriptions "Czojbalsan" and "Mongolia" plus a tactical marking, namely a diamond with figures inscribed – 44 at the top and 1 below.

(UA)



A T-34 tank (with pressed or moulded turret) of 19th Armoured Corps, Crimea, November 1943. The tank is painted uniformly in olive green (4BO). Notice the two tactical numbers on the turret – 12 and 1109.

A T-34 tank (with pressed or moulded turret) from an unidentified unit, Leningrad Front, Autumn 1943. The white number 228 was located on the sides and rear of the turret. This tank wears non-typical camouflage, sand-coloured patches having been applied on top of the main olive green colour (4BO)

TACTICAL MARKINGS

The Soviet system of tactical markings was complicated and very varied. At the time of the T-34's initial introduction into front-line service the Russians did not employ any tactical markings at all. This was most probably due to an obsessive approach to military secrets. This is confirmed by photographs from the summer and autumn of 1941 – hundreds of damaged and scrapped T-34 tanks with scarcely any kind of tactical markings. Interestingly, some sources quote Armoured Forces Regulation of the RKKA of mid-1938 (UTW-1-38 which permitted the application of two-figure tactical markings using chalk or removable paint, white in colour but red for Winter). It appears though, that in the summer of 1941 such markings were sporadic in their appearance.

The outbreak of hostilities demonstrated that lack of tactical markings hindered leadership on the battlefield. For this reason markings began to be introduced but it was done in an uncoordinated manner. It is certain that there were no general principles which were binding on armoured and mechanised units. As a result there appeared in the initial weeks of war various kinds of markings using geometric figures and numerals. One example comes from the T-34s from 24th Tank Regiment (8th Mechanised Corps) which took part in the fighting around Brody-Dubno in July 1941. These had white diamonds painted on the rear of their turrets. On the turret sides there were vertical white bands which were most likely identification marks for the infantry. Some units employed white horizontal lines painted on the turret fronts. The number of bands indicated that a tank belonged

A T-34 with remnants of winter camouflage, spring 1942, Kharkov area. On the hull glacis plate the tactical number "30" can be seen.
(PS Coll.)

to a certain division forming part of the Mechanised Corps.[1]

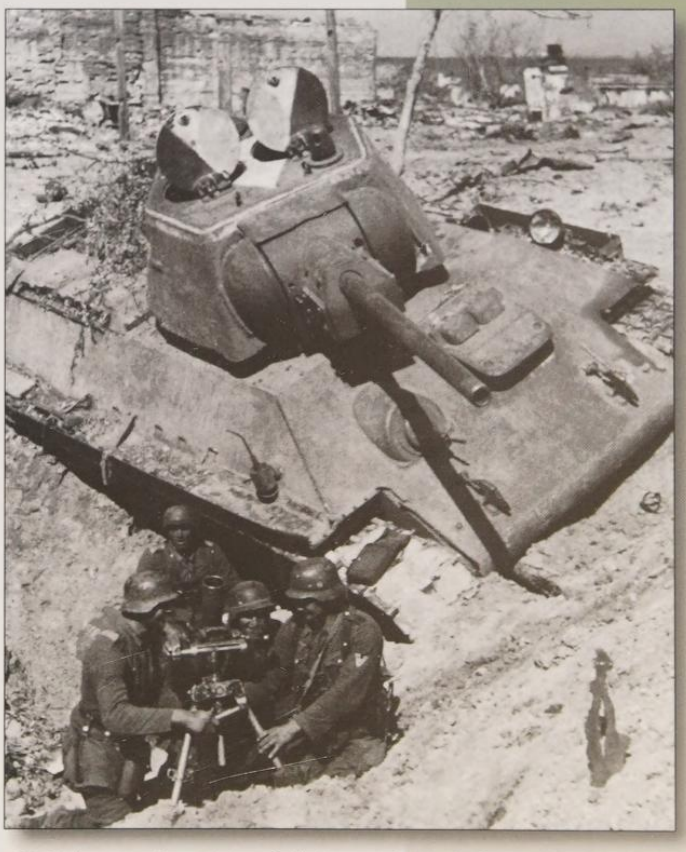
In autumn 1941 markings appeared on T-34s in the form of geometric figures (squares, circles, rectangles, diamonds and triangles). These were painted on turret sides and were sometimes repeated on the rear of the turret. In the initial phase of the war, probably the symbol most frequently used was the diamond in consequence of the fact that this was the staff marking of the armoured units of the Red Army. As a rule the diamond was about 40cm high and divided in half by a horizontal line, above and below which were located the tactical markings. The principles in accordance with which the markings were employed were varied. For example, in 116th Independent Armoured Brigade, in the upper part of the diamond was located the Battalion marking (the figure 1 or 2) while the lower portion of the diamond bore the Brigade code (the number 045). Another principle was found in the 1st Guards Armoured Brigade where at the turn of 1941/1942 the T-34 tanks had the number "1" in the top part of the diamond while the lower portion remained blank. In 22nd Armoured Brigade (1943-44) the Brigade code (the number 22) was located in the upper part of the diamond, while the lower part had the tank's individual tactical number, also appearing on the side and rear of the turret (e.g. 14, 20)[2]. Additionally, in that unit the tank's individual tactical number was repeated on the sides and rear of the turret. This was most probably due to the fact that the diamond was too small for the markings to be read from a distance. In some units, not only numbers but letters too were inscribed in the diamonds. 51st Independent Tank Regiment may serve as an example of a unit employing such markings. On the T-34 tanks of this Regiment the letter "A" was seen in the top part of the diamond designating 1st Battalion or the letter "B" for 2nd Battalion, while in the lower part appeared the tank's individual code number (e.g. 24).

Markings are also known where the tactical number was applied inside an undivided diamond. Interestingly, markings employing the diamond were to be found not only in the initial months of the war. Over the years 1942-1943 these were probably the most frequently-used tactical markings in the units fighting on the central fronts. In some units it was kept right up to the end of the war (not only on T-34 tanks).

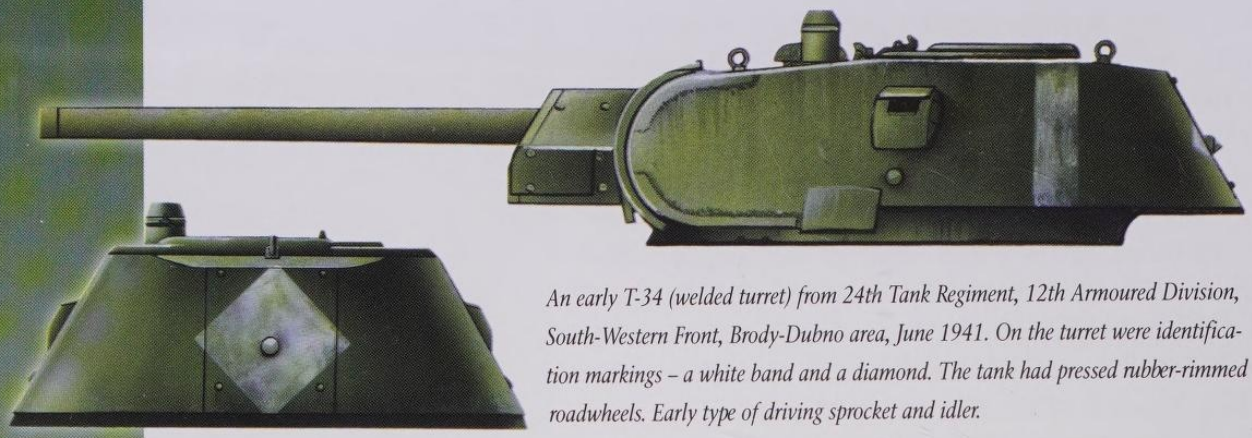
1 In certain units, such as 6th Armoured Corps (later re-titled 11th Guards Armoured Corps), such markings lasted until the end of the war.

2 The tank bearing the code number 20 belonged to the Company commander and it can be seen from the photographs that the background of the diamond's interior is a somewhat different colour from the tank's finish. However, it is difficult to establish from a black-and-white photograph what colour it was.

A T-34 (hexagonal turret) with the name "Moscow Kolkhoz Worker" (in red) destroyed in the Stalingrad area at the beginning of 1943. "Runs" in the colour show that the inscription was done in a great hurry. On the side of the hull can be seen "Stutzpunkt" (support point) applied by the Germans **(PS Coll.)**

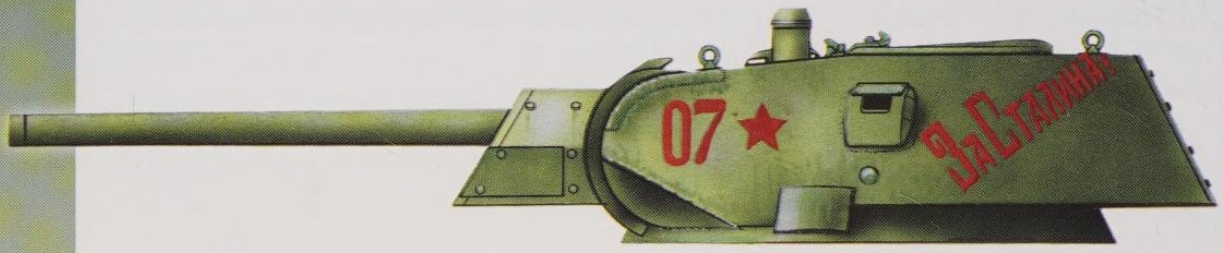


A T-34 (hexagonal turret) from 26th Armoured Brigade destroyed in the suburbs of Stalingrad, autumn 1942. On the turret can be seen a white triangle with an inscribed yellow ring – an identifying mark for air forces. Around the turret ran a white band which was most probably an identifying marking for ground forces' units.



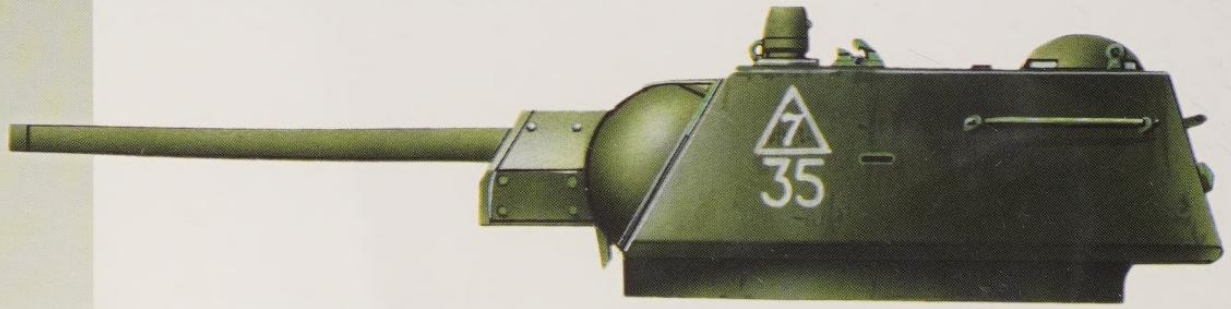
An early T-34 (welded turret) from 24th Tank Regiment, 12th Armoured Division, South-Western Front, Brody-Dubno area, June 1941. On the turret were identification markings – a white band and a diamond. The tank had pressed rubber-rimmed roadwheels. Early type of driving sprocket and idler.

A T-34 (welded turret) from 2nd Battalion, 116th Independent Armoured Brigade. Western Front, Spring 1942.

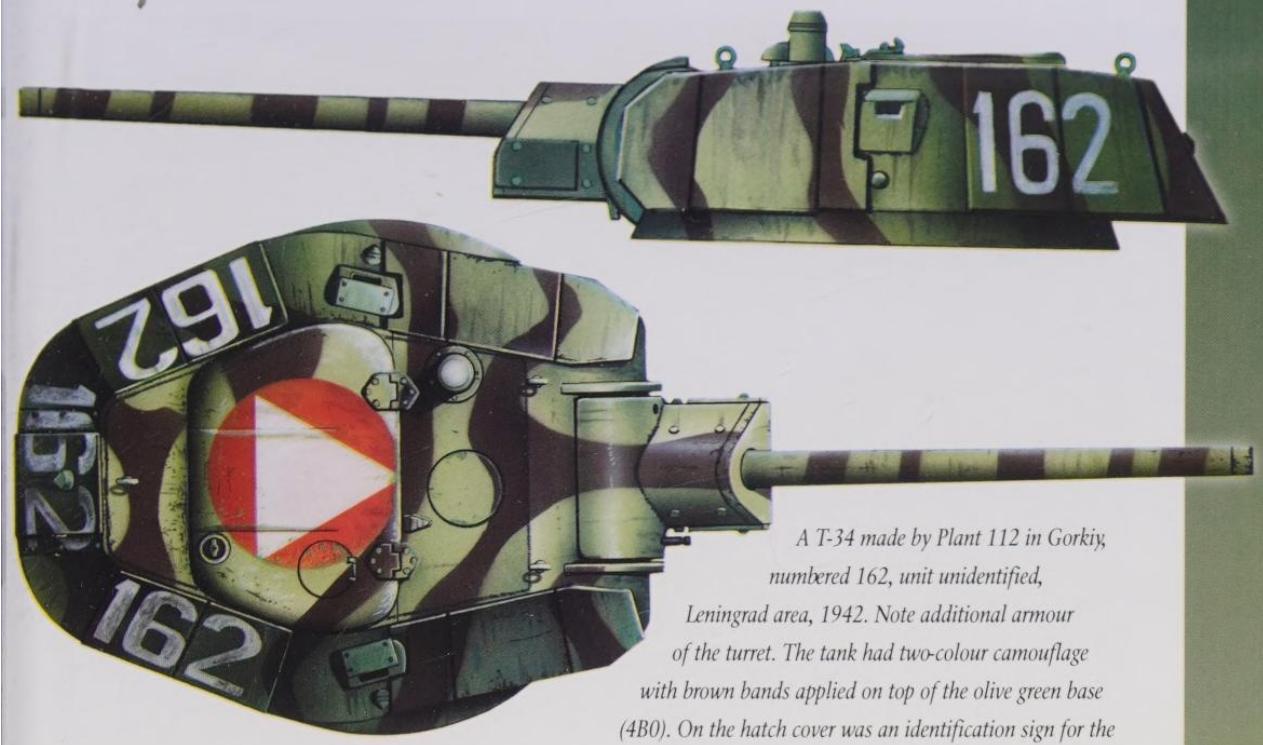


A T-34 made by STZ (simplified gun shield) from an unidentified unit of 5th Tank Army, with the number 07 and inscription "For Stalin", Bryansk from Summer 1942. According to some sources, the tactical number and inscription were white in colour, though this seems improbable. The tank had all-steel roadwheels.

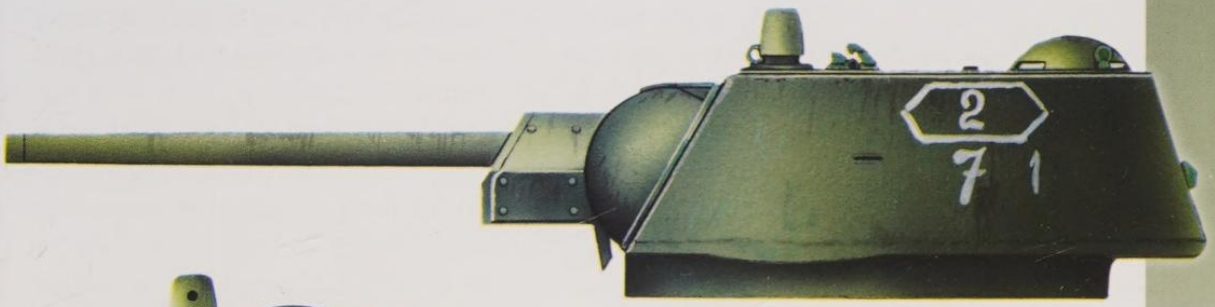
A T-34 produced by STZ and numbered 32-12 from 84th Armoured Brigade, Kharkov area, South-Western Front, May 1942. The first part of its tactical number denoted its unit (the number 32 was the code for 84th Brigade), while the number 12 following was the tank's individual number. The vehicle numbered 32-12 had all-steel roadwheels.

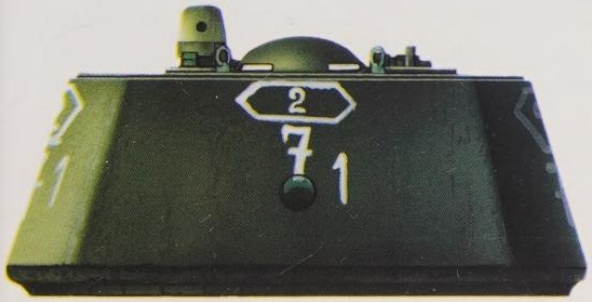


A T-34 (with hexagonal turret) from an unidentified unit. Northern Caucasus, Autumn 1943. The number 7 in the triangle was the unit's tactical sign while the number 35 designated the tank. The whole vehicle was painted in olive green.

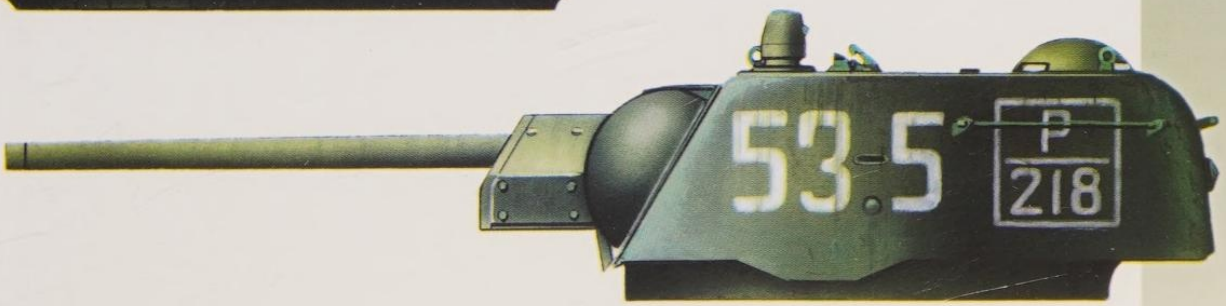


A T-34 made by Plant 112 in Gorkiy, numbered 162, unit unidentified, Leningrad area, 1942. Note additional armour of the turret. The tank had two-colour camouflage with brown bands applied on top of the olive green base (4B0). On the hatch cover was an identification sign for the air forces. The vehicle had all pressed rubber-rimmed road-wheels. Drive sprocket and idler were of the early type.





A T-34 (hexagonal turret) unit unknown. Summer 1943. The whole tank painted olive green. The tactical marking was on the sides and rear of the turret. The first and fifth pair of roadwheels were rubber-rimmed, while the rest were all-steel wheels.



A T-34 (with pressed turret) from 19th Armoured Corps, Southern Front, September 1943. All surfaces of the tank were in olive green. Note the non-typical tactical markings – a number and a geometrical symbol. In some sources the number of this tank is given as a four-digit one – 5325. It appears though, that there was nothing between the 3 and the 5. The larger gap between the figures was due to the fact that there was an observation slit and an aperture for the flare pistol. A precise analysis is made difficult by the fact that known photographs of the vehicle were taken from a long distance and show the vehicle burnt out.

A T-34 with hexagonal turret, summer 1943. Note the tactical number 25-14 and the white identifying triangle on the turret roof.
(PS Coll.)

Examples are also known where geometric markings are linked to tactical code numbers. An example is provided by the tanks of 13th Guards Armoured Brigade (summer 1944). The Brigade's marking was the figure "7" painted in a square. In addition there were individual two-figure numbers, such as "53", painted on the turrets. Such markings were in use by this unit until the autumn of 1944 when they were replaced by the stag symbol.

On Soviet tanks markings were also employed in the form of tactical numbers plus alphanumeric characters. Some units employed tactical numbers as early as the summer of 1941. An example of this is provided by the vehicles of 101st and 108th Armoured Division, where two- and three-figure numbers appeared. It seems, though, that tactical markings in this form proliferated somewhat later. One reason for this was the fact

An early T-34 knocked out near Orel in autumn 1941 (the photo is dated 10.10.1941). The white identification band is visible on the turret roof.
(PS Coll.)

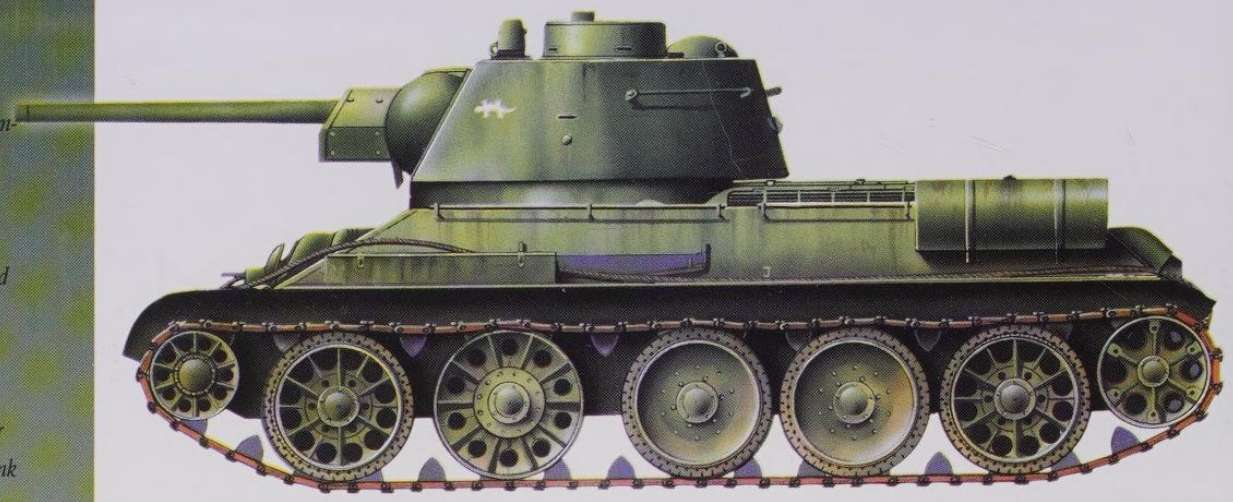
that some geometrical markings were not easily readable. For this reason they were replaced in many units by tactical numbers and also by alphanumeric markings. The 52nd (Red Banner) Armoured Brigade operating at the Trans-Caucasian front may serve as an example. In autumn 1942 it used diamonds as its marking, while in early 1943 the diamonds were painted over and alphanumeric markings such as K-8 appeared on the turrets instead.

When speaking of tactical code numbers, these were usually of two or three digits, although there were examples of single-figure or four-figure codes. The three-figure numbers were, however, the most widely used and at the same time the best adapted to the organisation of Soviet armoured units. Usually, the first figure was the marking of the unit (regiment or battalion) while the following two were the tank's code marking.

Usually the tactical numbers were located on the turrets, most frequently on the sides and rear. In a few units

Right: *Tanks from an unidentified unit. It can be seen that the numbers were repeated at the rear of the turrets, with white bands painted on their roofs for identification by air forces* *(UA)*

A T-34 made by STZ bearing the number 85, from the same unidentified unit, Western Front, spring 1942. *(UA)*

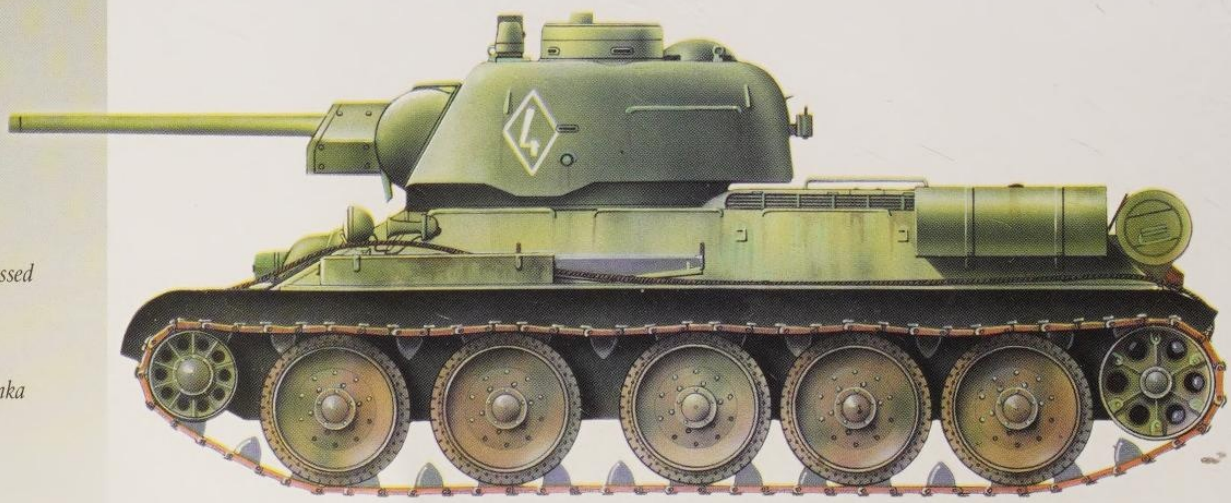


A T-34 (hexagonal turret and commander's cupola) belonging to the Commander of an anti-tank gun battalion (probably 292nd Guards Self-propelled Gun Regiment), 4th Guards Mechanised Corps, 3rd Ukrainian Front, September 1944. The whole tank is painted in olive green (4BO). Note the tactical marking on the turret – a lizard.

the tactical numbers were repeated on the front of the hull. According to some sources, this location of numbers on the sides and rear of turrets and on the hull front was recommended in the "Combat Regulation for Armoured and Mechanised Units of the Red Army" of January 1944. Such Regulation Markings can be seen on T-34 models of the units fighting in the Riga region and in the Finnish town of Viipuri (on vehicles of 30th Guards Armoured Brigade for example). It seems, though, that this document was not universally adopted in practice.

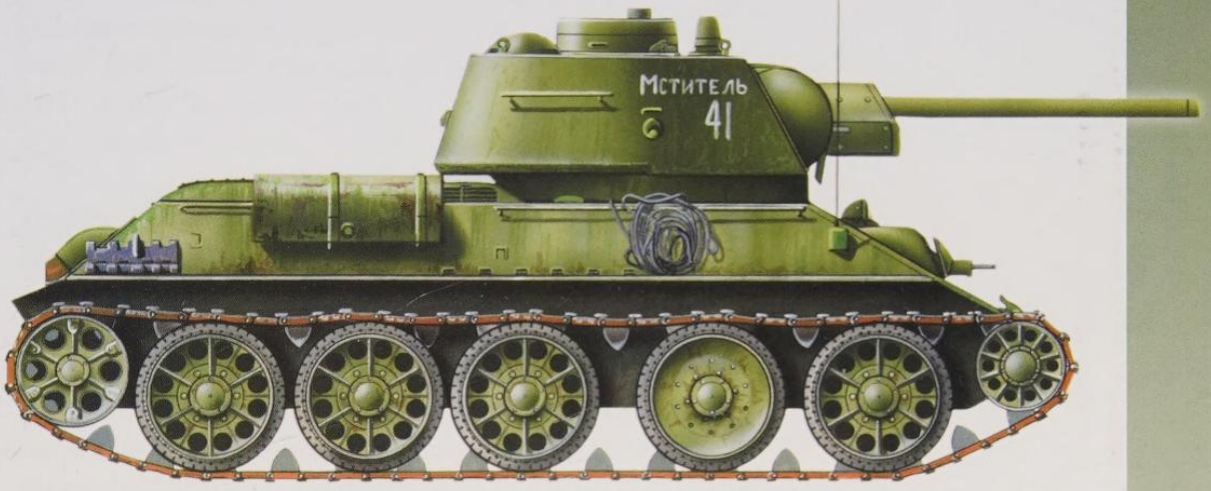
It should be added that in the initial stages of the war it happened sporadically that tactical numbers were painted on vehicle body sides. An example of this was provided by the single- and two-figure numbers located directly on the hulls of T-34/57s of the 21st Armoured Brigade towards the end of 1941. The unit Commander, Major Lukin, used a tank with the number "20".

One example of interesting markings was provided by the tactical numbers consisting of two two-figure groups which appeared on tanks operating in 1942 on the South-Western Front. Normally, the first group gave the code number of the unit while the second was the tank's number. Markings of this type appeared (among others) in 5th Guards Armoured Brigade ("10-12", "10-13") and 84th Armoured Brigade ("32-12", "32-27", "32-32"). Similar markings were applied in 5th Guards Armoured Corps which took part in the fighting in the Kursk area in summer 1943 (e.g. "52-01", "52-02", "52-06").



Tank OT-34 with flame-thrower (pressed turret with commander's cupola) under test at Kubinka test ground.

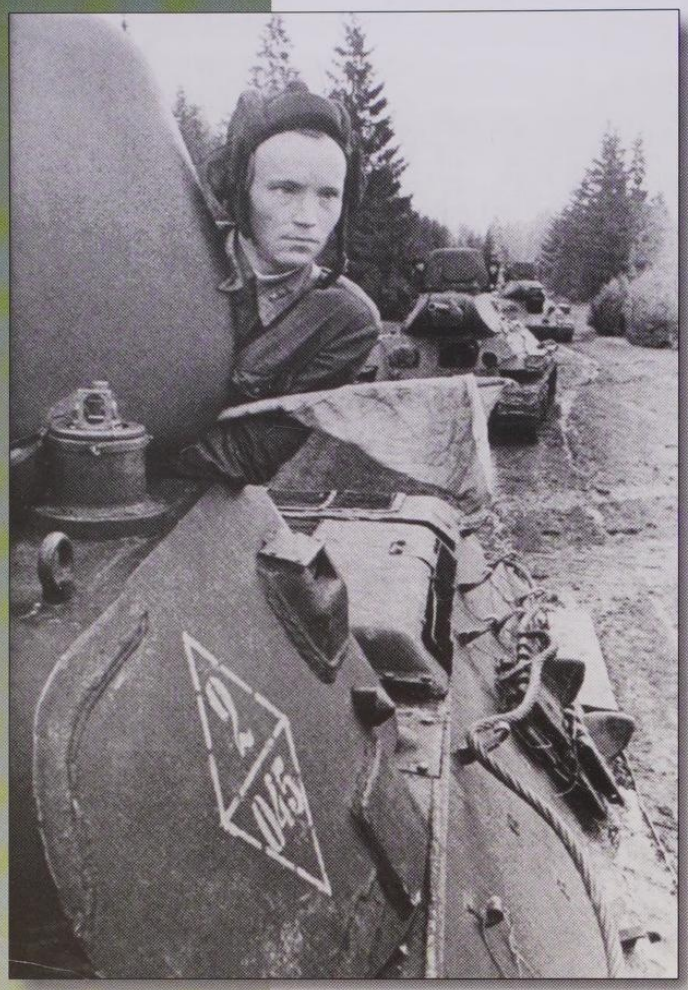
A T-34 (with hexagonal turret and commander's cupola), 87th Guards Independent Heavy Tank Regiment, from the fighting for the "Festung Breslau", April/May 1945. The tank has a single-colour paint scheme in olive green (4BO), number 533 in white on the turret.



A T-34 (with hexagonal turret and commander's cupola) with the number 41 and personal name "Mstitiel", unidentified unit, Sebastopol' 1943. This was one of the first Soviet tanks to penetrate to liberated Sebastopol'. At that time a staff was fastened to the turret handrail with flags – the Soviet flag and that of the Soviet Navy. All surfaces of the tank painted in olive green (4BO)

T-34s from the Estonian 45th Uksik Tank Regiment, May 1943. On the turrets of the two vehicles are white inscriptions in Russian and Estonian – "for Soviet Estonia". These inscriptions were only on the left side of the turrets.

(PS Coll.)



Another unit operating in the same area at the same time had markings beginning with the number "25", e.g. "25-14". Markings of this type were painted on the turret sides and sometimes a tank's individual number would be repeated on the glacis plate. In one of his publications, J. Magnuski stated that markings consisting of two groups of figures were typical of Soviet armoured units in the years 1942-43. It appears, though, that this applied mainly to units operating in the south of the USSR.

As was mentioned earlier, many Soviet armoured units employed alphanumeric markings such as "D-44" (on the OT-34), "B-4" (85th Independent Tank Regiment, Crimean Peninsula, spring 1944), "L2-KS" (130th Armoured Brigade, spring 1942), "D003" (an unidentified unit on the Western Front, summer 1943) or "300-M" (an unidentified unit in summer 1944).

Sporadically there also appeared other markings. In the summer of 1944 animal symbols appeared on tanks of the units forming 3rd Ukrainian Front. The T-34 turrets were painted with lizards, stags and others (13th Guards Mechanised Brigade) and also swallows (15th Guards Mechanised Brigade).

The system of Soviet tactical markings is a subject hiding many mysteries (this is not confined to the T-34 either). Any kind of generalisations are fraught with risks. It happened that there were tanks in the same unit which had different tactical markings. Many tanks also had markings which seemed to belong to different systems. An example is provided by the tanks of 1st Guards Cavalry Corps (which formed part of 3rd Guards Armoured Army). These, in addition to 3-digit tactical numbers, featured alphanumeric markings. One such T-34 tank, in addition to its three-figure tactical number "431", bore on its turret the marking "KK-1". It may be thought that the various markings gave the unit (some think the "KK" stood for Cavalry Corps) plus the tank's individual number ("431"). There are also known photographs of tanks which had on their turrets four-digit and two-digit numbers. On another tank could be seen a triangle with the numbers "41" and "6" painted in it, while beside it was a painted

Above: Lieutenant Sukharev leading a column of T-34 tanks from 2nd Battalion, 116th Independent Armoured Brigade, March 1942. The tactical marking of the unit, a diamond with the numbers 2 (Battalion) and 045 (Brigade) inscribed in it, is very clearly visible ***(PS Coll.)***

Left: A T-34 (made at STZ) from 84th Armoured Brigade, exercising prior to the offensive on Khar'kov, spring 1942. The tactical code number 32-32 can be seen. ***(UA)***

A T-34 in winter camouflage with an identifying red triangle on the turret hatch.
(PS Coll.)

square bearing the letter "A". Why was this done? One can only speculate on this question: was it due to a change in the unit's system of markings, or was it due to the transfer of tanks between units? It should be borne in mind that the high intensity of activity during which there was no time to correct markings would have complicated the situation. Damaged tanks were repeatedly repaired and often despatched to different units from those from which they came. Such vehicles surely sometimes kept their old markings, sometimes they were painted over and sometimes new ones were added to them.

It seems that despite attempts which were made, the Russians did not set up during the Second World War any uniform system of tactical markings. The situation was rendered

A T-34 with hexagonal turret from 30th Guards Armoured Brigade, Leningrad Front, spring 1943. The vehicle has two-colour camouflage – olive green and brown patches. Also clearly visible on the turret are a red star, the number 106 in white, the Order of the Red Banner and the name "Stalinets".

A T-34 tank (with hexagonal turret) with the number 169 and the name "Molotov", from 106th Armoured Brigade, 12th Armoured Corps, Western Front, Autumn 1942. All tank surfaces painted in olive green. Most probably the first and last pairs of roadwheels were rubber-rimmed while the rest were of all-steel wheels.

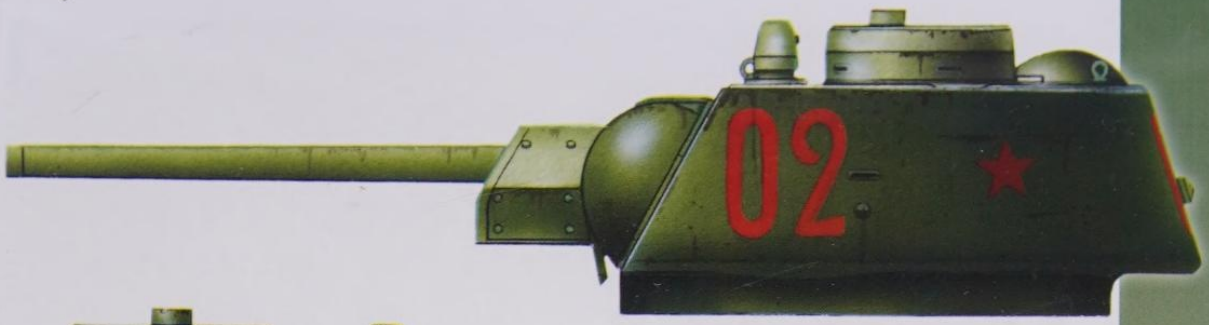
A T-34 (hexagonal turret) in Winter camouflage from 52nd "Red Banner" Tank Brigade with the marking K-8, trans-Caucasian Front, early 1943. Note the painted diamond – the earlier tactical marking being used in this unit. The first pair of road-wheels were rubber-rimmed, while the remainder were all-steel wheels. Drive sprocket of early type.

A T-34 (hexagonal turret) with the number 1-5, unidentified unit, Berlin, May 1945. On the turret were the white identification bands characteristic of the Soviet vehicles taking part in the Berlin Operation. The whole tank is olive green in colour (4BO).

A T-34 (hexagonal turret) with the name "Severomorets" in Winter camouflage, 1943. The tank was bought with money collected by sailors of the Northern Fleet. The first and last pairs of roadwheels were of rubber-rimmed, while the remainder were all-steel wheels.

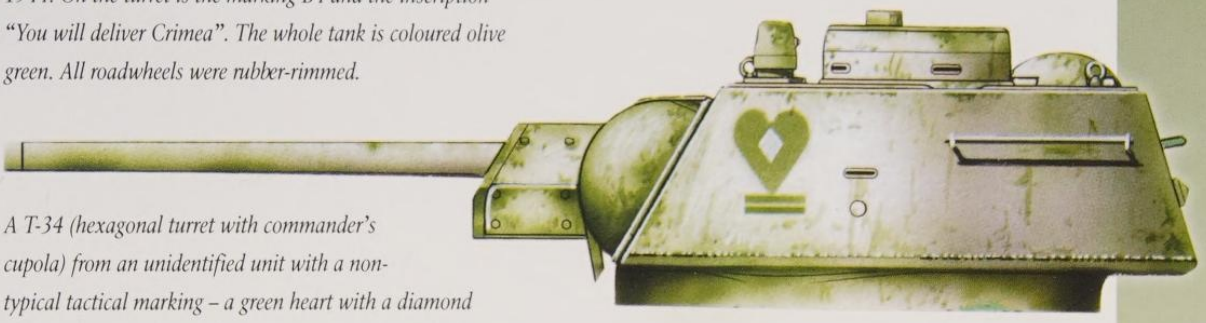
The rear of a T-34 tank turret from an unknown unit with the non-typical tactical marking 1T-023, Summer 1943.

The rear of a hexagonal T-34 turret, 52nd "Red Banner" Armoured Brigade, trans-Caucasian Front, September 1942. The tank was in two-colour camouflage – olive green (4BO) and brown. The tactical marking was located on the sides and rear of the turret. The tank had all pressed rubber-rimmed roadwheels.

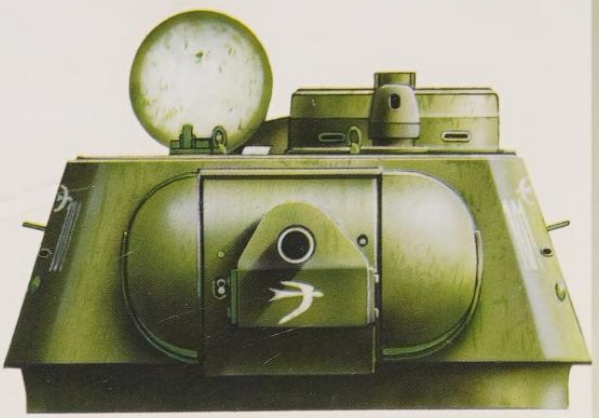


A T-34 (hexagonal turret with commander's cupola) from 24th Tank Regiment, 46th Mechanised Brigade, Belarus, Summer 1944. The whole tank coloured olive green (4BO). The tactical number repeated on the rear of the turret. According to some sources the stars on the turret had white or yellow borders. All roadwheels were rubber-rimmed.

A T-34 (hexagonal turret with commander's cupola) from 85th Independent Tank Regiment, Crimean Peninsula, April 1944. On the turret is the marking B4 and the inscription "You will deliver Crimea". The whole tank is coloured olive green. All roadwheels were rubber-rimmed.



A T-34 (hexagonal turret with commander's cupola) from an unidentified unit with a non-typical tactical marking – a green heart with a diamond in the centre and two strokes below it. The tank had all pressed rubber-rimmed roadwheels.



An OT-34 (hexagonal turret with commander's cupola) with the number 101 and a white swallow (also on the gun mantlet), 15th Guards Mechanised Brigade, 4th Guards Mechanised Corps, 3rd Ukrainian Front, 1944. The whole tank painted olive green. On the turret roof was a white identification mark, most probably a circle.

A destroyed T-34 (hexagonal turret), early 1943. On the turret are visible the marking K-3 and a geometrical symbol – a diamond inscribed in a circle. The numbers inside the diamond are hard to read (probably 1 above and 6 below).

(ZL Coll.)

Destroyed KV-1 and T-34 tanks, Southern Front, summer 1943. These were most probably vehicles from units of the 28th Army. The white identification bands around the turrets are clearly visible.

(UA)

A T-34 with pressed turret, Leningrad Front, June 1943. The vehicle has on its turret the tactical number 104 in white and a red star in addition.

(PS Coll.)

more difficult by the reorganisations of the structure of the Armoured Forces which took place over the years 1941-1945. From 1943 onwards the main tactical combination was the armoured (mechanised) corps and, as certain authors claim, the tactical markings were determined at that level. Actually, there are many examples of markings standardised with a corps. Frequently, though, decisions on markings were made at other levels of command such as regiments, brigades and sometimes armoured or mechanised armies.

As regards colours, the tactical markings on tanks in single- or multi-colour schemes were most frequently white. Much more rarely yellow or red was used for that purpose. On vehicles in winter camouflage, though, the markings were usually red, less frequently black and sporadically green, too. In view of the fact that markings were very often painted on by hand their style was very variable. The same applied to the size of figures, letters and geometrical markings.

A T-34 displayed in Victory Park, Poklonna Gora, in Moscow. The vehicle has a turret made by Plant No. 112 in Gor'kiy but the body was made by STZ.

(TS)

An early T-34 stored in a museum at Kubinka. During rebuilding it was attempted to bring it to look like vehicles made in 1940. The end result, though, is not satisfactory, although the tank body itself corresponds to a 1941 version.

(TS)

INDIVIDUAL NAMES and PROPAGANDA SLOGANS

On Soviet T-34 tanks there appeared various kinds of inscription. Some of these can be recognised as propaganda slogans such as "For the Motherland", "For Stalin", "the answer from Stalingrad". Many vehicles also had names such as "Lenin", "Stalin's Man", "Spartak", "Kutuzov", "Leningradiets", "Szczors", "Parkhomienko". In some units the adoption of names was standard practice (106th Armoured Brigade, 130th Armoured Brigade). Tanks bought by citizens' funds and workplace contributions usually bore endowment markings like "Moscow Worker", "Gorkiy Pioneer", "Severomorets", "Khabarovsk Komsomolets". The OT-34 tanks which equipped 38th Tank Regiment (1st Armoured Army) and which were funded by Metropolitan Sergey of Moscow, bore the name "Dimitriy Donskoy". In view of the fact that the tanks were bought with money supplied by the Orthodox Church, the unit had the unofficial name "Holy". Inscriptions on turrets were not only in Russsian. The T-34 tanks of 25th Guards Tank Regiment (6th Mechanised Brigade) which were crewed by Latvians had on their turrets the inscription "Latvijas Strelnieks" ("The Latvian Rifleman", in honour of the Latvian unit fighting during the civil war of 1917-1920). On the other hand, some tanks from 45th Estonian Tank Regiment carried on their turrets the inscription "For Soviet Estonia" in Russian and Estonian.

After the end of the war, some T-34 tanks had combat exploits or the route travelled in combat painted on them. One of the most unusual tanks was that used by the Commanding Officer of 4th Guards "Kantemirov" Armoured Division, General P.P.Poluboyarov, during a parade in Moscow on 7th November 1945. On the bodywork was depicted the distance covered by the Unit in combat while the turret carried the name "Kantemirovets". But these markings were not painted on but welded on. In addition, on the single hatch cover of the turret were painted the code number and emblem of the unit.

A T-34 (hexagonal turret) with the number 106 and personal name "Staliniets" from 30th Guards Tank Brigade, Leningrad Front, Summer 1943. The tank wears two-colour camouflage, olive green (4B0) and brown. Noteworthy are the red star and the Order of the Red Banner located on its turret. Most probably, the first and last pairs of roadwheels were rubber-rimmed, while the rest would be all-steel wheels.

T-34/76 in Foreign Service

CZECHOSLOVAKIA

The 1st Czechoslovak Independent Armoured Brigade (1. Ceskoslovenska Samostatna Tankova Brigada) fought on the Eastern Front using T-34 tanks which exhibited two types of camouflage. The first consisted of overall olive green. A number of vehicles had camouflage featuring the addition of dark brown patches. This type of painting most probably did not appear until the beginning (spring) of 1945.

In the initial stages neither distinctive signs nor tactical number codes were used, only the name of a locality and known forms were painted on: "Lidice" (the locality where the assassins of R. Heidrich had hidden and which was subsequently "pacified"

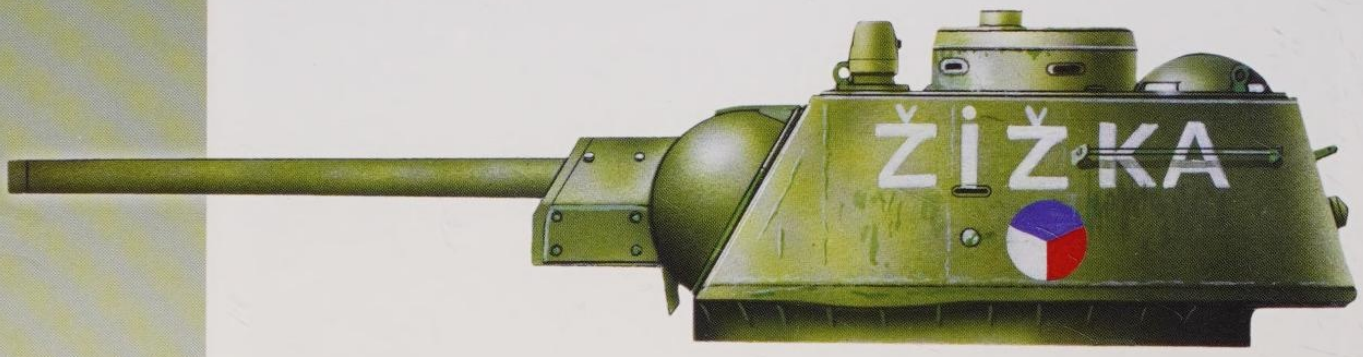
Two T-34 tanks with hexagonal turrets from 1st Czechoslovak Independent Armoured Brigade, Novokhoperskarea, summer 1943. The tanks have uniform olive green colour scheme (4BO) plus white individual names "Lidice" and "Janosik".

(MK Coll.)

The hexagonal turret (with commander's cupola) of a T-34 tank held at the museum in Lesany. On the turret is the name "Lidice". Unfortunately, the inscription is not done precisely, with the result that it differs from those actually carried by tanks in wartime.

(MB)

A T-34 tank (hexagonal turret with commander's cupola) with the white tactical number 511 from 1st Battalion, 1st Czechoslovak Independent Tank Brigade, Ostrava Operation, April 1945. On April 26th 1945, this tank commanded by cet Jan Pluhar, was destroyed near the area of Dolni Lihota. The vehicle is in two-colour camouflage – dark brown patches applied on the base olive green (4BO) colour. Below the tactical number was the Czechoslovak roundel which was a rare sight in the March-April 1945 period.



The hexagonal turret with commander's cupola of T-34 tank "Zizka" of 1st Czechoslovak Independent Tank Brigade, Summer 1944. All tank surfaces painted olive green (4BO). The Czechoslovak roundel was located only on the left of the turret. All the tank's road wheels were complete with rubber tyres.

T-34 tank "Zizka" from 1st Czechoslovak Independent Armoured Brigade, 4th June 1944 near Czernowice (Bukovina). Note the Czechoslovak roundel on the turret. It was located only on the left-hand side.

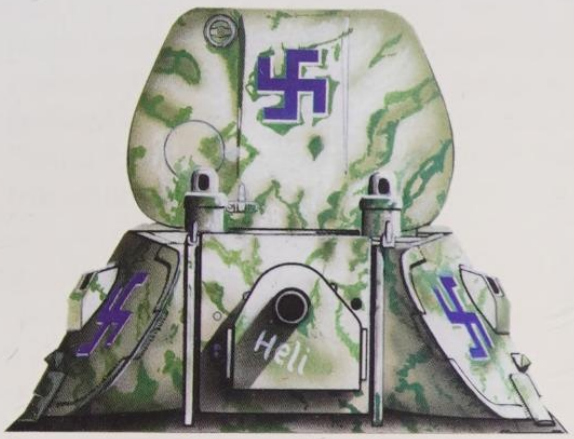
(MK Coll.)

by the Germans); "Praha", "Janosik", Zizka". In the later stages, three-digit tactical numbers were introduced (usually white) which were painted on the sides of the turrets. In the summer of 1944 there appeared Czechoslovak white-red-blue national insignia, on the turrets of individual tanks. However, larger-scale application of them did not begin until just before the end of the war (April/May 1945).

FINLAND

Finnish armoured units used T-34 tanks[1] captured from the Russians plus a few supplied by the Germans. At first the vehicles remained in their Soviet olive green livery. Since the Finns modified the T-34 tanks (new spotlights, different mudguards, new containers), the tanks were most probably repainted in green using Finnish paint (interestingly, this had the name "Feldgrau"). In Autumn 1943 a three-colour paint scheme was introduced, the tanks being painted green, grey and brown. In winter the Finnish T-34 tanks were painted white.

During World War II Finnish identification marks were applied to T-34 tanks – the hakaristi, a blue swastika with white outlines. They were painted on turrets (on the sides and on top) and also on the tank hull. Regarding actual markings, only registration numbers were painted on the tanks at first. In the years 1941-1943 these consisted of the letter "R" (rekisterinumero) followed by a three-digit number, e.g. R-105 or R-155. They were in white and located on the front and rear plates of the hull. In summer 1943 a new system of registration numbers was brought



The turret of a Finnish T-34 in Winter camouflage, Aanislinna, Spring 1943. The tank had the registration number R-105 on the hull while the personal name "Heli" appeared on the gun shield. All roadwheels were rubber-rimmed.

A Finnish T-34, R-105, with the name "Heli" on the gun shield, in winter camouflage, spring 1943. Easily seen is the location of identification marks (Finnish swastikas) and also a small Finnish flag on the left-hand side of the hatch.

(PS Coll.)

1 The Finns called T-34 tanks "Sotka".

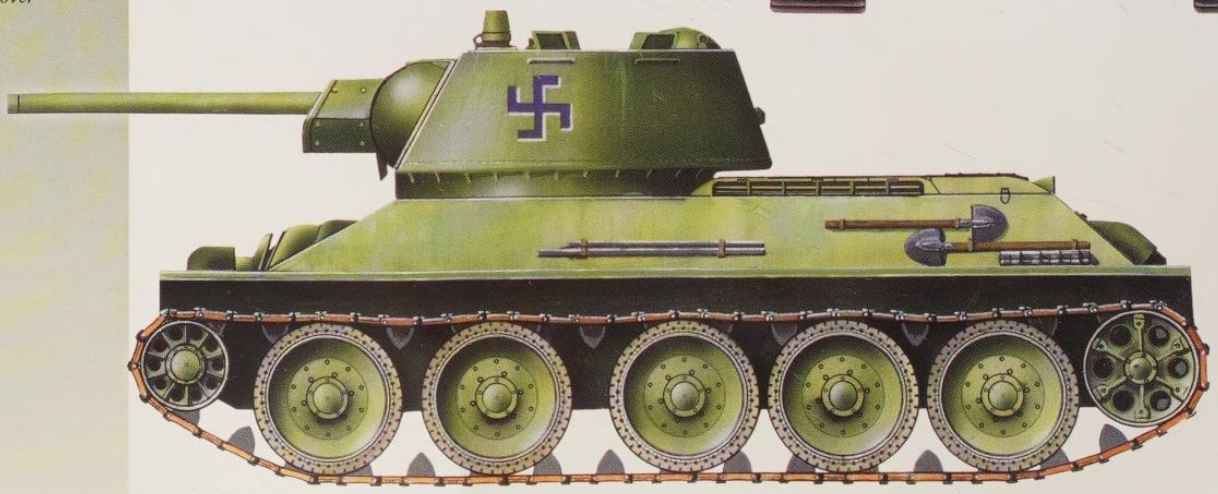
A Finnish T-34 (Ps231-2) in three-colour camouflage, marchpast at Ensossa, 4th June 1944.
(ZL Coll.)

in. The registration consisted of a marking giving the type of vehicle plus an individual code number such as Ps 231-6 (Ps = Panssarivaunu). White in colour, the markings were located on the front or rear of the tank hull. Also in summer 1943, tactical code numbers were introduced on Finnish tanks, modelled on the German system. Examples appearing on T-34 tanks are "331", "322", or "324". These were yellow in colour and located on the turrets (on the side or the rear).

An interesting point is the fact that in photographs of several T-34 tanks used during the war small Finnish flags are visible. These are mounted on short masts secured to the mudguards or turrets. It may be conjectured that these were an additional element of identification.

The T-34 tanks used by the Finns in the post-war period had an overall dark green paint finish[1]. The identification sign

A Finnish T-34 (hexagonal turret, modified by the Finns by adding 4 steel periscopes), registration number R-155, Aanislinna, October 1942. This vehicle was made at Plant 183 in Nizhniy Tagil and captured by the Finns in Spring 1942. The tank was painted all over in green.

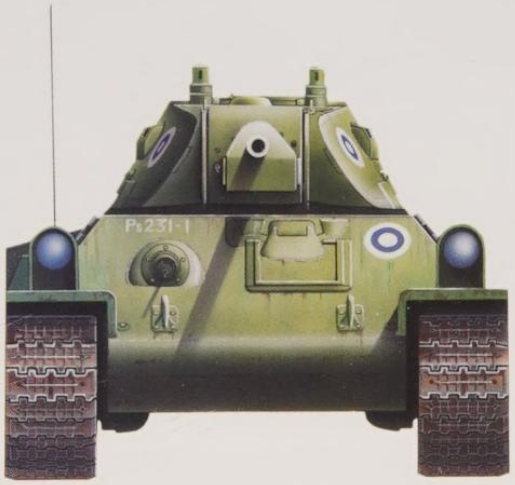


1 By 1959 the Finns still had seven tanks of the type.

A Finnish T-34 kept at Parola Museum. The tank has various modifications – toolboxes, new mudguards, a muzzle brake.

(ZL)

was changed – the tanks had white-blue-white cockades painted on them. On the other hand the registration number system remained as it had been during the war.



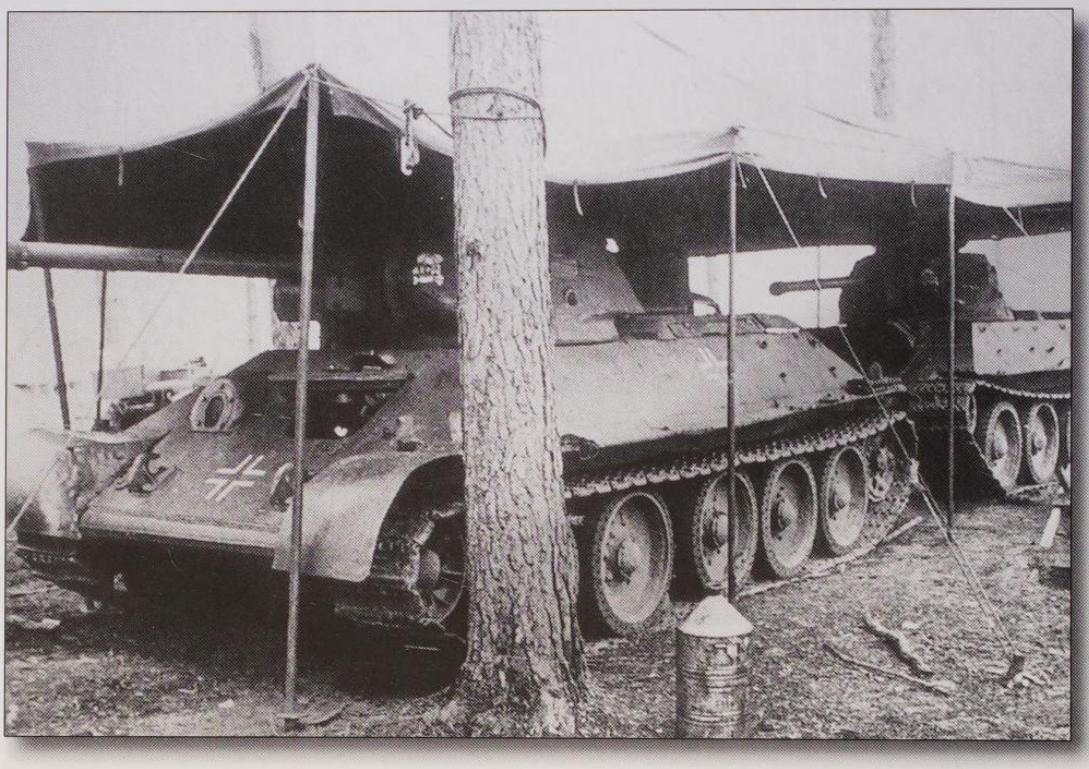
An early T-34 (No.183 Plant, 1941) painted in post-war Finnish colour, registration number Ps231-1, Jyvaskyla, Summer 1959. All surfaces coloured green. The vehicle had all wheels complete with rubber tyres. During repairs the tank was modified – new mudguards, spot lights, additional storage boxes and a muzzle brake on the gun barrel.

A T-34 (hexagonal turret) with registration number Ps231-5 in post-war Finnish paintwork. Pansarirykmenti (Armoured Regiment) from Parolanummi, Summer 1957. The tank is painted in a single colour, green. Finnish white/blue/white roundels appear on the turret and the hull.

(FA)

GERMANY

Captured T-34 tanks used by units of the *Panzerwaffe* wore various types of camouflage[1]. Many vehicles remained in their original Soviet paint, i.e. all surfaces painted in olive green. Those vehicles which underwent repair and modernisation were usually repainted – initially grey (*Panzergrau/Dunkelgrau*). In later periods the German T-34s were painted in sand (*Dunkelgelb*) upon which were sprayed patches of green (*Grun, Olivgrun*) and brown (*Rotbraun*)[2]. There were also two-colour paint schemes, usually green camouflage patches applied on to overall sand. The arrangement and shape of the camouflage patches were very varied. Sporadically there would appear too a single-colour pattern – overall sand. In the winter, German T-34 tanks were usually painted white.



A T-34 with the markings of 3rd SS Panzer Division "Totenkopf", Eastern Front, September 1942. The whole tank was painted grey (tank grey).

(PS Coll.)

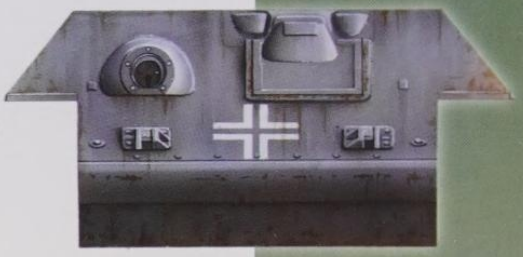
German soldiers posing in front of a T-34. Various kinds of repainting can be seen on the tank. The lighter colour of the wheels suggests that it may be a remnant of winter camouflage.

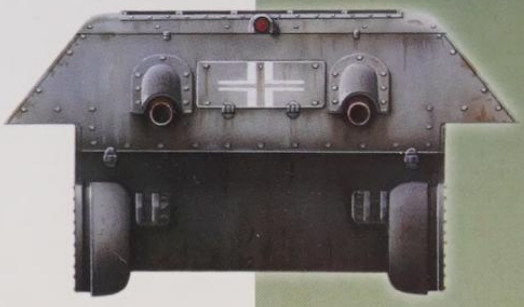
(CZ)

1 Captured T-34 models were called by the Germans PzKpfw 747 (r).

2 Nor did the German colours follow uniform standards. The "Dunkelgelb" shade had several variants.

T-34 captured and used by the Germans. This tank was made by Plant No 112 "Krasnoje Sormovo", in Gorkiy, 1942. Painted in three tone camouflage, Dunkel Gelb overall with patches of Green and Brown. Large Balkenkreuz on the turret.





Panzerkampfwagen 747(r) or a German T-34 (an early version with welded-up turret) from 18th Panzer Division, Eastern Front, 1942. All surfaces of tank coloured grey (Panzergrau). On the turret was the red tactical number 531 (some publications identify the number as black).

A T-34 (with hexagonal turret) numbered 1023, used by 2nd SS Panzer Division "Das Reich", Eastern Front, Spring-Summer 1943. The tank is camouflaged in three colours: camouflage patches in green and brown were applied on top of the base colour – sand. The tank was modified by the Germans by adding toolboxes, screens and Notek lights. On the turret hatch was a swastika on a white ring. This served as identification for the Air Force.

A German T-34 in single-colour camouflage of sand (Dunkelgelb). On the front glacis plate can be seen the tactical number 6.

(Internet)

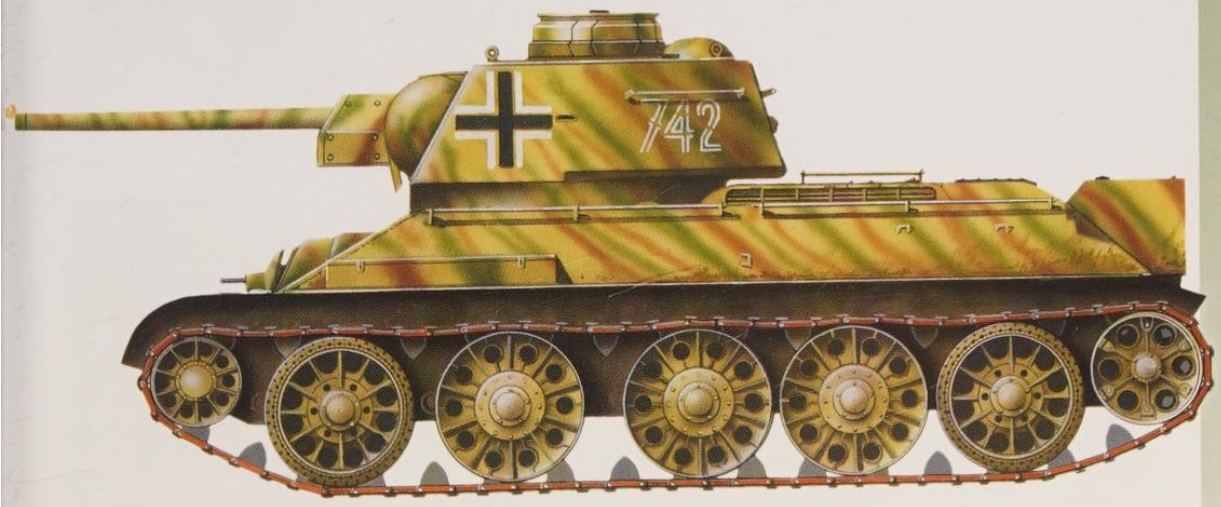
A T-34 with hexagonal turret from 5th Augmented Police Panzer Company, Trieste, May 2nd 1945. The photograph was taken by a soldier of 2nd New Zealand Division. It is clearly visible that the vehicle has three-colour camouflage and the tactical number 01 (in black). This tank was later taken over by the Yugoslavs who painted over the Balken-Kreuz with their own three-colour flag.

(JP)

A T-34 with hexagonal turret from the Tank Grenadier Division "Grossdeutschland" with markings in the form of a cross and swastikas located on the rear of the turret. It appears that the swastikas are painted on a different background from that of the tank's camouflage. This photograph was taken in winter 1943.

(Internet)

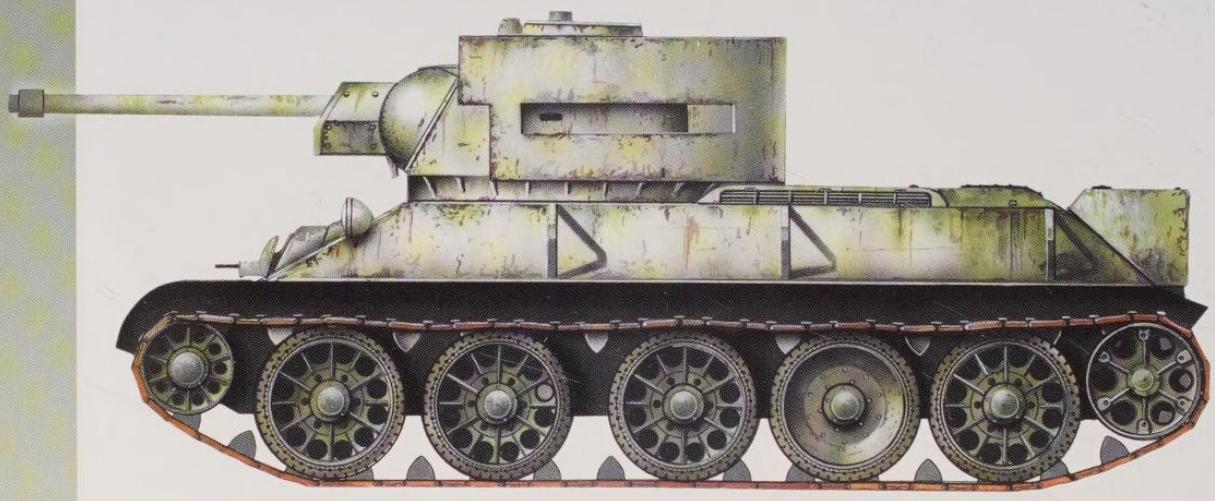
A T-34 with cast turret in Panzerwaffe service. The tank is probably in two-colour camouflage – with green patches applied on the base sand colour (Dunkelgelb). (Coll.PS)



A German T-34 tank (hexagonal turret with with cupola from a Panzer IV tank) numbered 742, 1st Panzer Regiment, 6th Panzer Division, Eastern Front, 1943. The tank has non-typical three-colour camouflage - green and brown streaks were applied on top of the sand base colour. According to some sources, the white letters Op were located on the hull (probably from the name of the unit commander, von Oppeln-Bronikowski) plus the emblem of 6th Panzer Div. This, though, is not unequivocally confirmed by photographs

A T-34 in winter paint scheme from a unit forming part of the "Grossdeutschland" Division. Rzhev area, November 1942. In the foreground is a half-tracked vehicle transporter type Sd.KFZ 252.

(NA)



A T-34 modified by the Germans (hexagonal turret with commander's cupola) in Winter camouflage, location near the town of Jassy, early 1944. Note the extra armour on the turret (screens) and the grab handles on the screens on the hull.

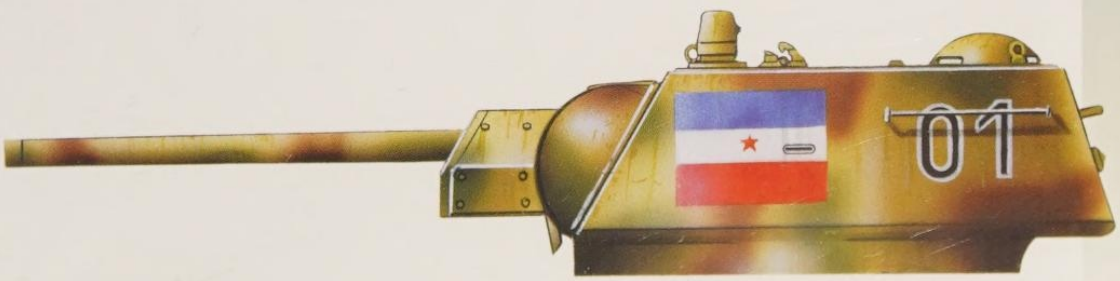
A destroyed T-34 of 5th Police Panzer Company, Trieste, April-May 1945.

(JP)

To captured T-34 models the Germans applied identification marks in the form of crosses, also sometimes swastikas. Most frequently these were of impressive size in order that the vehicles could be identified easily. The tactical markings were usually linked to the systems used by units which employed captured T-34s and for that reason they were very varied. Single-figure, two-digit, three-digit and four digit numbers may be encountered. Many vehicles also bore the units' emblems. Occasionally, personal names would be painted on T-34s – ("Hau-ruck", "Sinnhuber", "Tresckow").

An anti-aircraft T-34 with a quad 2 cm Flakvierling 38 from 653. schw. Panzerjaeger Abteilung, Galicia area, summer 1944. Vehicle in three-coloured German camouflage.

German T-34 tank (hexagonal turret) numbered 01, from No.5 (reinforced) Police Panzer Company, Trieste, Spring 1945. The tank had three-colour camouflage – camouflage patches in green and brown applied on to base sand colour. The turret of this same tank in Yugoslav colours – the Yugoslav flag was painted on instead of the cross, but the tactical number 01 was retained.



YUGOSLAVIA

The T-34 was on the strength of 2nd Armoured Brigade, but only for the duration of the training period on USSR territory. The vehicles had the standard Soviet paint scheme – all surfaces in olive green – with no other markings at all. It was most likely only for propaganda photograph sessions that Yugoslav flags were located on the tank turrets.

Interestingly, in the final period of the war the Yugoslavs captured several T-34 tanks which had been used by German forces. One such vehicle had served in 5th (reinforced) Police Takn Company [5. (verstaerkte) Polizei Panzer Kompanie] in the Trieste area (April/May 1945). Following its capture a Yugoslav flag was painted on the turret in place of the German cross. On the other hand the tank retained its three-colour German camouflage and even the tactical number "01" which the Germans had used. Another T-34 which had earlier been used by the Germans had a red star painted on its turret.

A T-34 tank (hexagonal turret) from the Yugoslav 2nd Armoured Brigade, 1944. Vehicles of this type were used during crew training on USSR territory. The tank is uniformly painted in olive green (4BO). The Yugoslav flag is located on the turret – most likely only for the duration of the propaganda photo shoot.

A photograph taken during training of 2nd Yugoslav Tank Brigade on USSR territory. The Yugoslav flag was put on the tanks most probably for the purposes of the propaganda photo shoot.

(UA)

A T-34 with hexagonal turret captured by the Yugoslavs at Trieste in May 1945. The tank's camouflage is visible, although on the basis of this photograph it is difficult to state unequivocally whether it is of two-colour or three-colour type. But the red star located on the turret is clearly visible.

(JP)

A T-34 (with hexagonal turret) in three-colour camouflage with the Yugoslav flag on the turret (painted on where the German cross had been), Garibaldi Square in Trieste, May 1945. Earlier, this tank served with the German 5th Augmented Police Panzer Company. Interestingly, the German tactical number 01 was retained.

(JP)

Yugoslav troops in Trieste, May 1945. The tank on the left is a T-34. The Yugoslav flag is clearly visible on its turret. On the right is a Stuart tank from 1st Yugoslav Armoured Brigade. In May 1945 Nos. 1 and 2 Armoured Brigades ended their combat journeys at Trieste.

(JP)

EAST GERMANY

In 1949, T-34 tanks once more found themselves on the strength of German units. These were vehicles supplied by the Russians to the new German state – the German Democratic Republic. In all, 119 T-34/76 tanks served in units of the so-called Kasernierten Volkspolizei and later the Nationalen Volksarmee (set up in 1956). The last tank of this type was withdrawn from service halfway through the 1960s. Practically all the vehicles had been converted to tank recovery vehicles or technical vehicles known as T-34T.

The tanks were painted uniformly in olive green. Initially it was Russian paint but following repairs, German-made paint was most likely used. That vehicles of this type were modernised is attested to by (among others) the vehicle stored in the museum at Munster. Concerning tactical markings, it appears that in the initial period East German T-34 tanks did not have them. Later there appeared on some vehicles single- and two-figure numbers painted on the turret sides. National emblems appeared on East German vehicles in 1965 and so probably did not appear on T-34 tanks. They are, however, to be seen on T-34T recovery vehicles which appeared as the result of rebuilding of "seventy-sixes" (normally shown on the front of the hull).

A T-34T tank recovery tractor built on the basis of a T-34/76. On the body glacis plate an East German identification mark, introduced in 1965, can be seen.

(PS Coll.)

Photographs of East German T-34 tanks with 76.2mm guns are rare. This picture is interesting as the vehicle with hexagonal turret can be seen to have a tactical number – probably a figure 2. The photo was probably taken in 1957.

(JS)

Another photograph, most probably of the same unit. The first figure (3) of the tactical number can be seen. Unfortunately, there is no certainty that it was a single-figure number.

(JS)

POLAND

The vehicles deployed by Polish Army units on the Eastern Front had their whole surface painted in olive green. Right up to the present no photograph has been published of a Polish T-34 in multi-coloured camouflage. As in the Red Army, the tanks were painted white for winter.

In the initial stages (summer-autumn 1943) the vehicles issued to 1st Tank Regiment, which formed part of 1st Infantry Division, had no tactical code numbers at all. On the turrets of a few was located the Eagle of the Piast kings (less crown). The size of the eagles painted on the T-34s varied between 20 and 40cm. Since the eagles were painted by hand their shape was liable to vary. A similar situation occured with the vehicles assigned to 2nd

A T-34 from 1st Tank Regiment during a march past for the oath-taking of 1st Infantry Division i/n Tadeusz Kosciuszko, Sielce on Oka, 15th July 1943. The tank is olive green (4BO). On the turret is a white eagle without a crown.

(ZL Coll.)

Wanda Wasilewska and Colonel Zygmunt Berling in front of a T-34 tank of 1st Tank Regiment, summer 1943. The vehicle is uniformly painted in olive green with no tactical markings and no eagle.

(ZL Coll.)

Natural camouflage – a Polish T-34 from 1st Armoured Brigade disguised under branches. Note also the cover on the spotlight – a rarely encountered item.

Two T-34 tanks from 3rd Company, 2nd Tank Regiment, 1st Armoured Brigade during a crossing of the Vistula in August 1943. Note the camouflaging of the tanks with branches and the wooden beams secured to the sides of the hulls.

(ZL Coll.)

A T-34 with the number 235 from 2nd Tank Regiment, 1sr Armoured Brigade during entry to a ferry for a crossing of the Vistula to the Magnuszewski bridgehead, August 1944. The location of the eagle and the tactical markings are clearly visible.

(ZL Coll.)

A Polish T-34 tank of 1st Tank Regiment, 1st Armoured Brigade, Smolensk, March 1944. The tank is painted uniformly in olive green (4BO). Note the tactical number O39 located in a white rectangle (most likely a remnant of Winter camouflage). In one photograph known before the time of this tank, the turret front is covered by a tarpaulin. It seems, however, that the vehicle could have had a white eagle painted on the turret although there is no absolute certainty regarding this.

Tank Regiment. In 1st and 2nd Tank Regiments many tanks carried no National markings at all. The obligation to paint eagles on the tanks of 1st Armoured Brigade (formed from the elements of the 1st and 2nd Tank Regiments) was introduced only by an order of the Commanding Officer in June 1944.

Tactical numbers were introduced in 1st Armoured Brigade only on January 31st 1944.[1] They were in white and were painted on the turret sides and in the case of some vehicles also on the rear of the turrets. The numbers were about 50cm in height, 25cm wide and 4cm thick. The tank of the Commanding Officer of 1st Tank Regiment bore the number "100", while the tank of the Commanding Officer of 2nd Tank Regiment had the number "200". The vehicles of individual company commanders in 1st Regiment were numbered "11" to "14"; in 2nd Regiment they had the numbers "21" to "24".

A T-34 from1st Tank Regiment, 1st Armoured Brigade i/n The Heroes of Westerplatte, Smolensk, March 1944. Bearing in mind the period during which this photo was taken, under the tarpaulin, on the turret there may have been the white eagle. Note the non-typical tactical number 039 – green in a white rectangle.

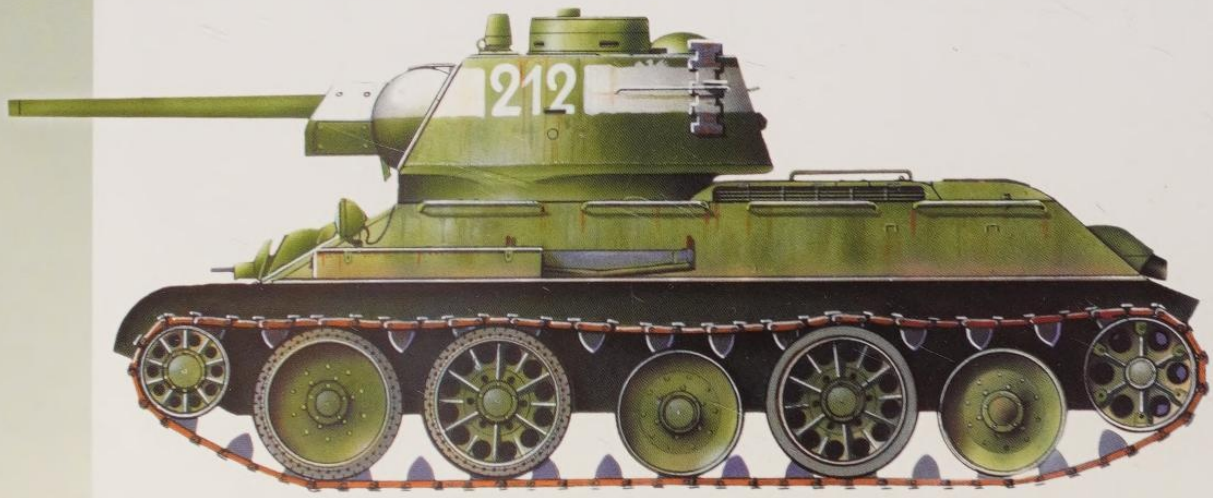
(ZL Coll.)

1 Information can be found that the T-34s deployed during the battle near Lenino in October 1943 had tactical numbers, but this is not confirmed by photographs.

A T-34 tank (hexagonal turret with commander's cupola) with the number 235, from 2nd Platoon, 3rd Company, 2nd Tank Regiment, 1 Armoured Brigade, Studzianki, August 1944. Tank painted in uniform olive green (4BO). Tactical number marked on the sides and rear of the turret.

Platoon commanders' vehicles were numbered "01" to "012" in 1st Regiment and "014" to "024" in 2nd Regiment. Tanks in the Platoons of 1st Regiment had the numbers "031" to "054"; those of 2nd Regiment were numbered "070" to "091". This system proved difficult to read and was therefore changed in mid-1944.

On June 7th 1944 the Commanding Officer of 1st Armoured Brigade issued an order which brought in a new tactical numbering system. The tanks in the regiments were given white, 3-digit markings. An exception was the T-34 of the Commanding Officer of 1st Armoured Brigade which received a four-figure number – "1000". The vehicles of the regimental commanders were numbered "100" (1st Regiment) and "200" (2nd Regiment). Meanwhile the vehicles of staff officers were numbered "101" and "201". In 1st Regiment

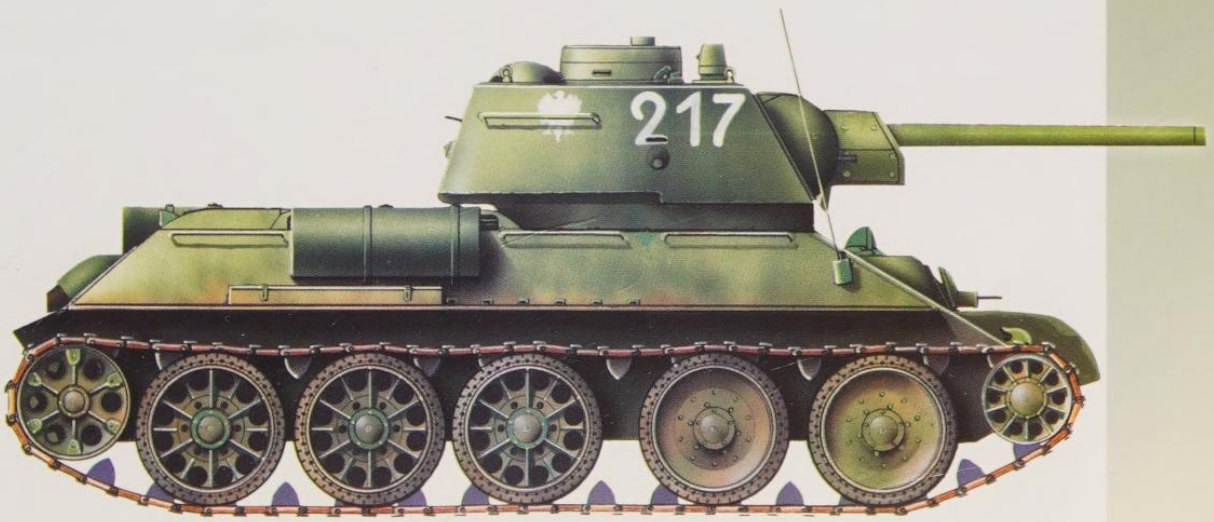


A T-34 tank (hexagonal turret with commander's cupola) numbered 212 from 4th Heavy Tank Regiment, Germany, April-May 1945. This was one of the T-34 tanks passed to 4th Heavy Tank Regiment by 1st Armoured Brigade as equipment reinforcement. The tank is uniformly painted in olive green (4BO). The white band on the turret was an identification marking employed during the Berlin Operation. The number 212 might also appear on the rear of the turret. Two wheels are missing their rubber rims.

The crew of 2nd Lieutenant Mateusz Lach in front of a T-34 with the number 217 from 1st Company, 2nd Battalion, 1st Armoured Brigade, early 1945. This was the most effective crew in the LWP with a final score of 12 German tanks destroyed. The tactical number was probably also situated on the rear of the turret and on the front of the hull.

(ZL Coll.)

the T-34 tanks were individually numbered between "110" and "139" while 2nd Regiment tanks were numbered "210" to "239". Company commanders' vehicles were assigned the numbers "110", "120", "130", "210", "220" and "230". On the other hand the vehicles of the commanders of the individual platoons had numbers with the final figure "1", "4" or "7", e.g. "131" or "237". In each of the regiments there was a reconnaissance platoon with three T-34 tanks. These were numbered "104", "105" and "106" in the platoon belonging to 1st Regiment and "204", "205" and "206" in the platoon of 2nd Regiment. The dimensions of the numbers were changed at the same time. They were 40cm high,



A T-34 tank (with hexagonal turret with commander's cupola) with the number 217 from 1st Company, 2nd Battalion, 1st Armoured Brigade, January 1945. The Commander of this tank was Second Lieutenant Mateusz Lach – the most effective Polish tank man on the Eastern Front. His crew destroyed 12 German tanks. This tank is uniformly painted in olive green (4BO). The tactical number probably also appeared on the rear of the turret and also on the hull glacis plate.

A T-34 tank (pressed turret aka moulded) with the number 226 from an unidentified unit of the Polish forces. It is not known whether this vehicle was passed on by the Russians during the war or whether it was repaired post-war.

20cm wide and 3 cm thick. Some tanks also had their tactical number repeated on the rear of the turret.

There was, however, an essential difference between regiments in the manner of applying markings. In 1st Regiment, the white eagle was painted first of all, followed by the tactical number, while in 2nd Regiment the tactical number was applied first, followed by the eagle.

In Autumn 1944, the organisational structure of the Brigade was changed, the place of the two regiments being taken by three battalions. The tactical numbers in 1st Battalion were from "110" to "129", in 2nd Battalion from "210" to "229" and in 3rd Battalion from 310 to 329. The tanks of the Battalion commanders had numbers of "whole hundreds", i.e. "100", "200", and "300". It should be remembered, though, that not all the numbers appeared in the case of the T-34/76 because from autumn 1944 the process began of re-equipping 1st Armoured Brigade with T-34/85 tanks. It is an interesting fact that in early 1945 there appeared on many T-34s tactical numbers painted on the left-

A column of T-34/76 and T-34/85 tanks from 2nd Battalion, 1st Armoured Brigade on the march to a crossing of the Vistula, mid-January 1945. On the hull glacis plates can be seen their tactical numbers (214, 215 and 216 on the T-34/76s). It can be seen, too, that the tanks are well laden with various boxes, boards and other items.

(ZL Coll.)

The tank of the Commander of 1st Company, 2nd Battalion, 1st Armoured Brigade during a crossing of the Bzura, January 1945. Note the white tactical number 210 painted not only on the turret sides but also on the hull glacis plate.

(ZL Coll.)

T-34 with hexagonal turret in museum at Poznan's citadel.

(PS)

T-34 with hexagonal turret (soft edge) preserved at military museum at Drzonow. Note the early type of hull. In 2008 this vehicle was moved from Westerplatte to Drzonow.

(PS)

hand side of the hull glacis plate. This can be seen in photographs taken during the Bzura river crossing and the fighting to break through the Pommernstellung (Pommern Line).

T-34 tanks were found also in other Polish Army units, among others 3rd Training Tank Regiment and 2nd, 3rd and 4th Armoured Brigades (two T-34s in each brigade) and 4th Heavy Tank Regiment. In the case of the latter unit this concerned six T-34s supplied by 1st Armoured Brigade and included vehicle "212". These vehicles were supplementary equipment but took part in the fighting around Berlin in April and May, 1945, and wore the white identification bands on the turrets which were typical for that operation. In the case of 3rd Training Tank Regiment the T-34s carried two-digit numbers ("25" to "31", "58" to "67", "69" to "71", "73" and "74"), although that unit used also vehicles received from 1st Armoured Brigade which kept their own tactical code numbers ("114","116", "126", "232").

The T-34s which survived World War II served in the Polish Army more or less until the end of the nineteen fifties, primarily in training units. It seems on the basis of photographs that the system of three-figure tactical numbers (e.g. "054", "067") was retained. The tactical numbers were in white and their height was about 60cm. As a rule they were located on the rear part of the turret.

A T-34 with pressed turret kept at the Vojensky Muzeum at Lesany, near Prague. In the final stages of the war, this tank served in the Second Army of the Polish Forces, finishing its combat career on Czech territory. ***(PS)***

RONA/ROA

Armoured vehicles, with some T-34s among them, were on the strength of Russian units which fought on the German side. One example was the Kaminski Brigade, a unit which won itself dismal glory on the occasion, among others, of the Warsaw Rising. According to some sources the tanks of this unit had inscribed on their turrets the mark RONA and the cross of Saint George.[1]

Early versions of the T-34/76 were also available to the Russian Liberation Army (ROA) of General Vlasov. In January 1945, vehicles belonging to 1st Division[2] were shown at a parade in Muensingen. All the surfaces of the tanks were painted olive green. On the turret sides was a shield in the Russian colours (horizontal white, blue and red bands) while the single-figure tactical numbers were painted on the front of the gun shields (two numbers – "2" and "3" – are confirmed by photographs). But photographs from the fighting in Prague in May 1945 do not show the three-coloured shields.

An early T-34 used by ROA units, march past at Munsingen, early 1945. Tank painted all over in olive green. During the fighting at Prague in May 1945, this tank no longer had the shield in Russian colours on its turret. The tactical number 2 remained on the gun mantlet.

ROMANIA

Right at the beginning of the war with the USSR, the Romanians captured many Soviet T-34 tanks. The design of the vehicle made such a great impression that production of it was contemplated at the Malaxa Works. In the end it did not happen but the tanks were subjected by the Romanians to intensive testing. At least a few T-34s were used by Romanian units for education and training purposes. There are no trustworthy data on the appearance of the Romanian T-34s, however. It seems that most of them stayed in their original Soviet colour scheme. Some sources state that six T-34 tanks were used by 1st Armoured Division *Romania Mare*. These tanks would most likely have had Romanian identification markings on their turrets.

1 A photograph is known of a BA-10 armoured vehicle with such markings, but the present author has not managed to find a photograph of a T-34 with those markings.

2 According to German classification it was 600th (Russian) Infantry Division.

HUNGARY

During the fighting on the Eastern Front, Hungarian forces captured about a dozen T-34 tanks and some of these were taken on the strength of fighting units. Unfortunately, there are very few photographs of these vehicles. A photograph is known of two T-34 tanks with Hungarian crosses on their turrets[1]. These vehicles were most probably painted in overall olive green. The expression "most probably" is not accidental: the quality of the photography is so poor that doubts may be entertained not only as to the colour of the vehicles but even as to whether these are definitely Hungarian crosses.

Regarding nationality, there is no doubt about the photograph of a T-34 in three-colour camouflage which had a three-colour, (red, white and green) horizontal band painted round its hexagonal turret. This photograph was taken in summer 1944 in the Ukraine. However, the camouflage arrangement on this vehicle corresponds more to the *Panzerwaffe*'s camouflage than to that of Hungarian tanks. This may suggest that the Hungarians got this vehicle from the Germans rather than capturing it from the Russians.

T-34/76 tanks were in use by Hungarian units after the end of World War II as well, although vehicles of this type most likely served only for training purposes. The vehicles had the standard Soviet paint scheme, overall olive green.

A captured Hungarian T-34 (hexagonal turret), probably photographed at the hamlet of Nadworna (Western Ukraine), 1944. The three-colour camouflage can be seen (more after the German style than the Hungarian); also a band around the turret in the Hungarian colours. ***(JB Coll.)***

1 The photograph appears in the book "A Magyar Kiraly Honvedseg Kulfoldi Gyartasu Pancelos Harcjarmuve 1920 - 1945"

ITALY

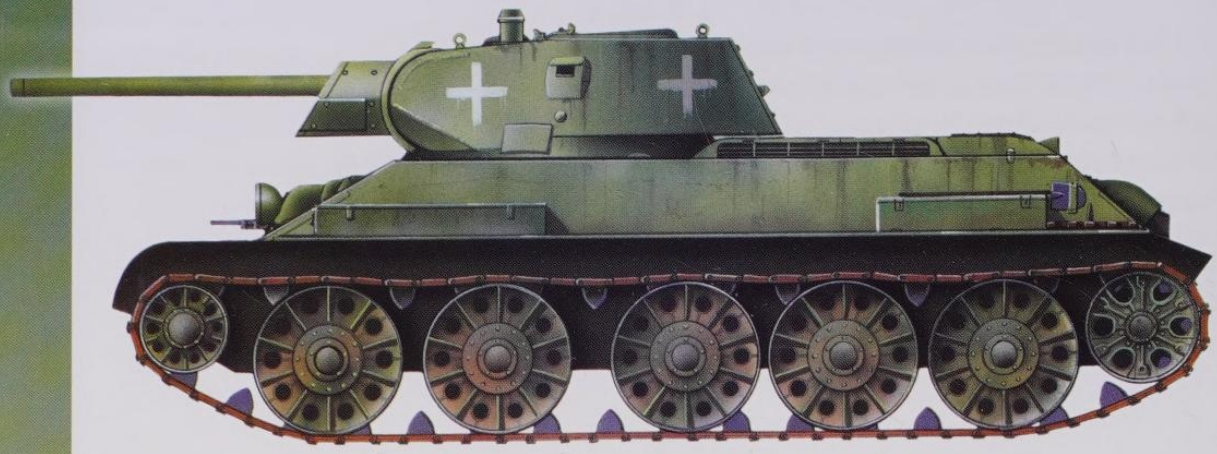
Soviet armoured vehicles were also trophies of war for Italians fighting on the Eastern Front. It is estimated that Italian units captured 15 Red Army tanks including a few T-34s. One vehicle of the type (a T-34 made at STZ Stalingrad) served in 120. *Reggimento d'Artigleria*. The tank was in the standard olive green Soviet livery with only large white crosses (the Cross of Savoy) painted on. These were applied to the sides and top of the turret and also on the hull front.

Italian soldiers with a captured T-34 (a model produced by STZ with simplified recuperator shield) in the area of Serafimovich (north of Stalingrad), 1942. Most probably this very tank was used by 120 Reggimento d'Artigleria.

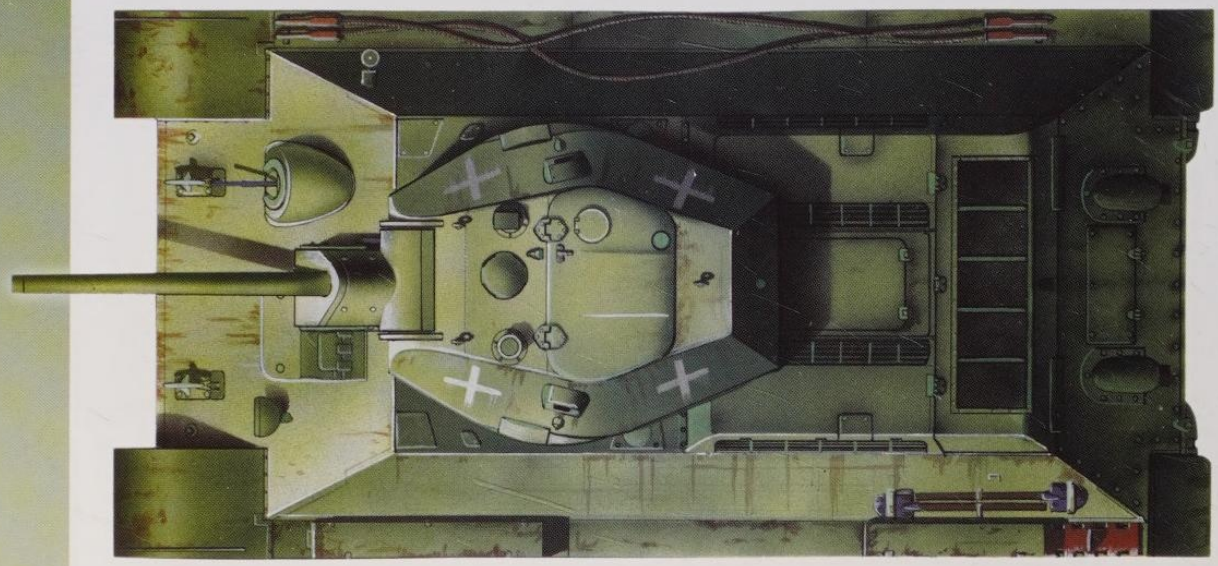
(ASSUME)

Italian soldiers inspect a destroyed T-34 made at STZ (simplified gun mantlet).

(ASSUME)



A T-34 produced by STZ (with simplified gun shield) captured by Italian forces and used on the Eastern Front by 62 Gruppo, 120th Reggimento d'Artigleria, in the south of the USSR, Summer 1942.



A T-34 tank produced at STZ with Italian markings. This vehicle was used in 62 Gruppo, 120 Reggimento d'Artigleria in summer 1942 in the southern sector of the Eastern Front.

(PS Coll.)

OTHER COUNTRIES

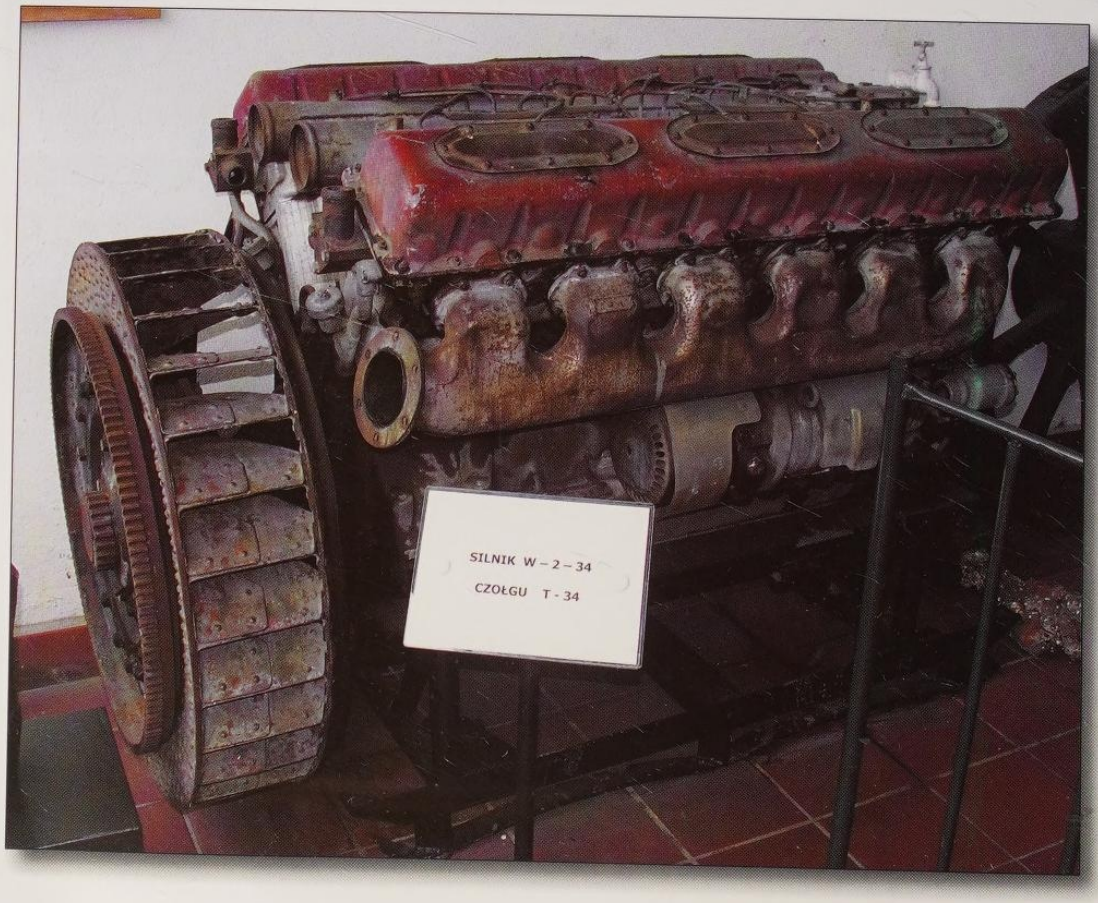
According to unconfirmed data, T-34/76s were also found in other countries. Probably in the mid-nineteen forties a certain number of T-34/76s were delivered from one of the Soviet Baykal training regiments to the Mongolian Army. According to some sources, the forces of North Korea obtained a small number of T-34/76s. American tank troops report encounters with these in the final phase of the war. In neither case is information to hand on the colours and markings employed on those tanks.

* * * * *

Not all T-34s received tactical numbers. These photos show a T-34 destroyed by troops of 2./ Regiment General Göring in Dubno, 29.06.1941 (eastern Poland, now Ukraine). (RW Coll.)

In detail

A T-34K (the commander's version) in the Armour Museum at Poznan.
(PS)



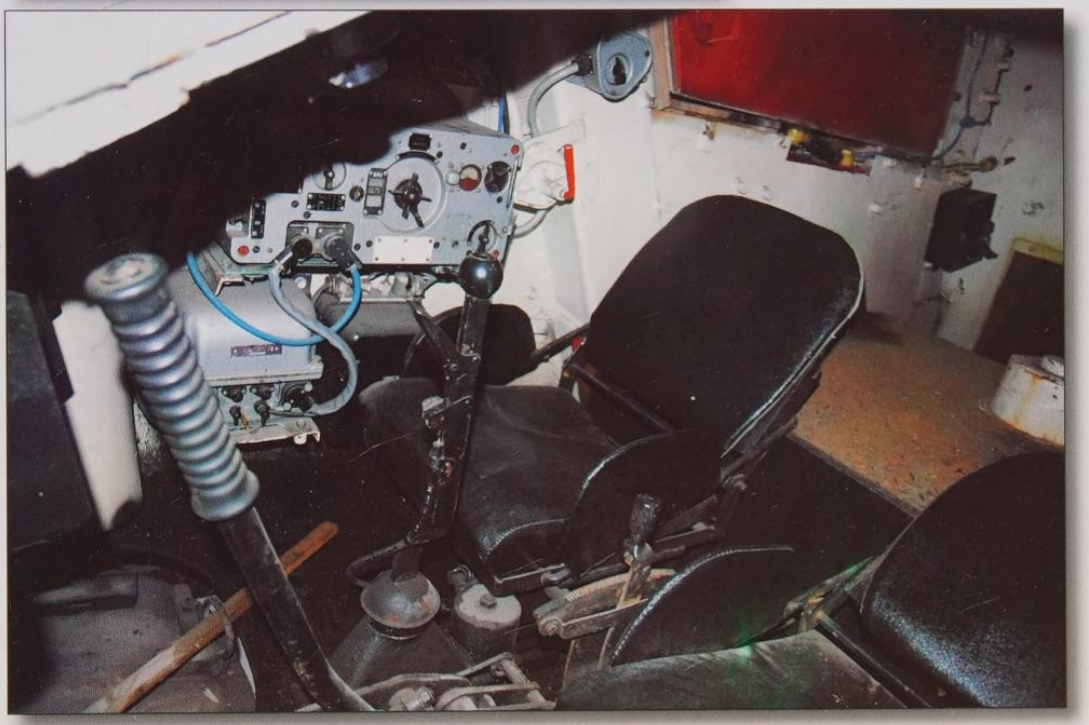
The V-2 engine – "heart" of the T-34.
(PS)

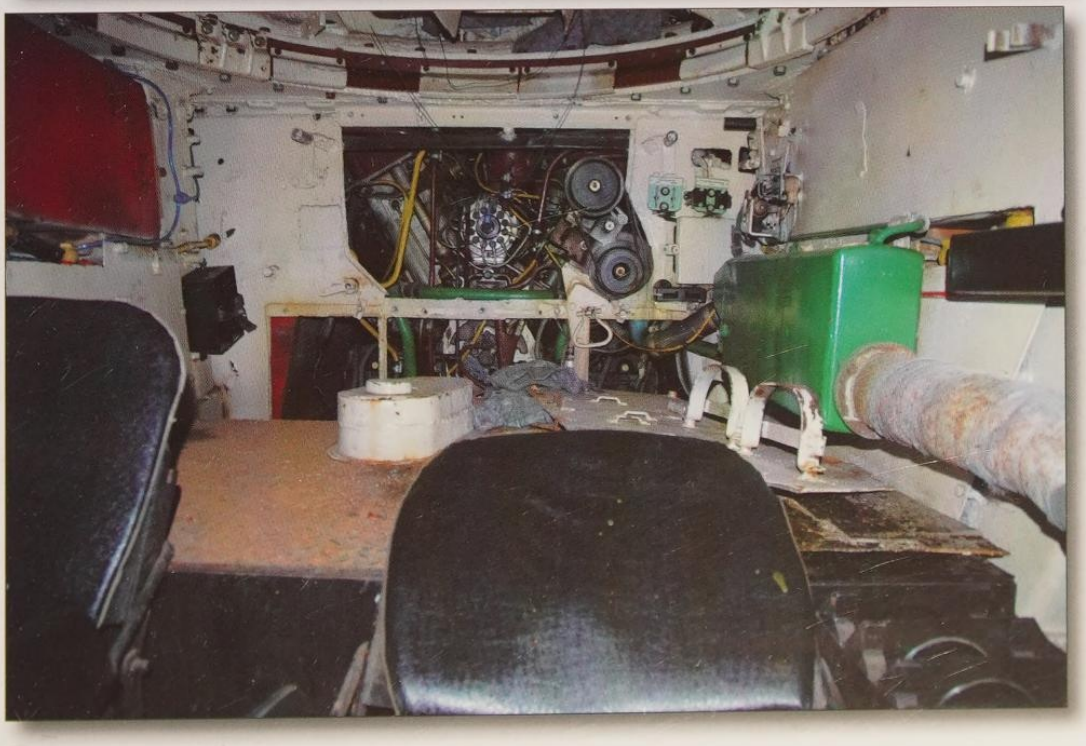
Left: Turret interior – the forward portion to the right of the F-34 gun. The machine gun has been removed.

(PS)

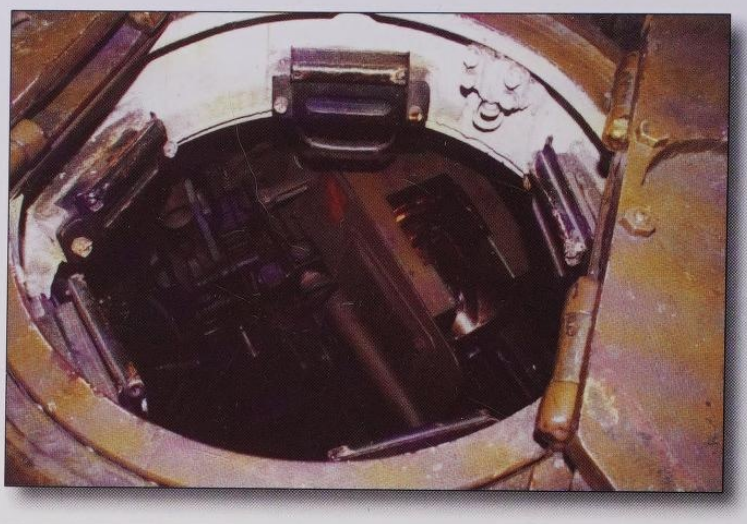
Below: The view inside the hull of an ex-East German tank at Munster. The equipment of post-war tanks was considerably more generous than for tanks made in the years 1941-1944.

(PS/GP)



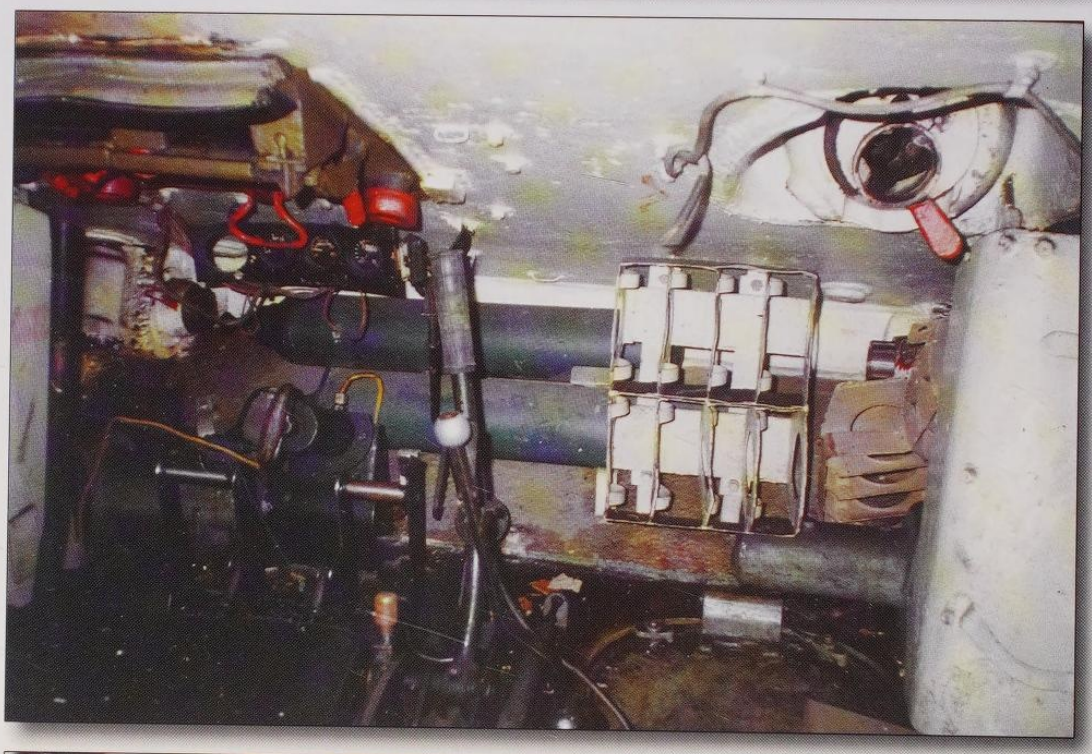


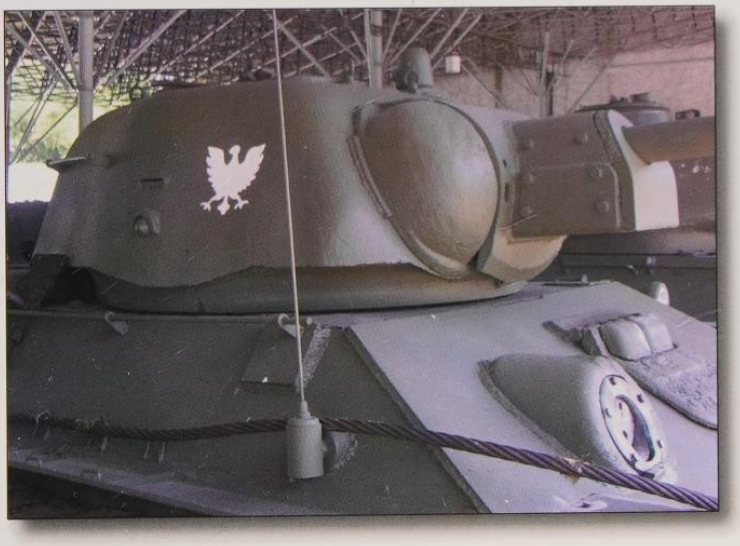
View inside the turret via the commander's hatch (a T-34K from Poznan). Components and colour of the F-34 gun can be seen.



The driver/mechanic's compartment of a T-34K at Poznan. The basic paint colour for the interior of T-34 tanks was white.

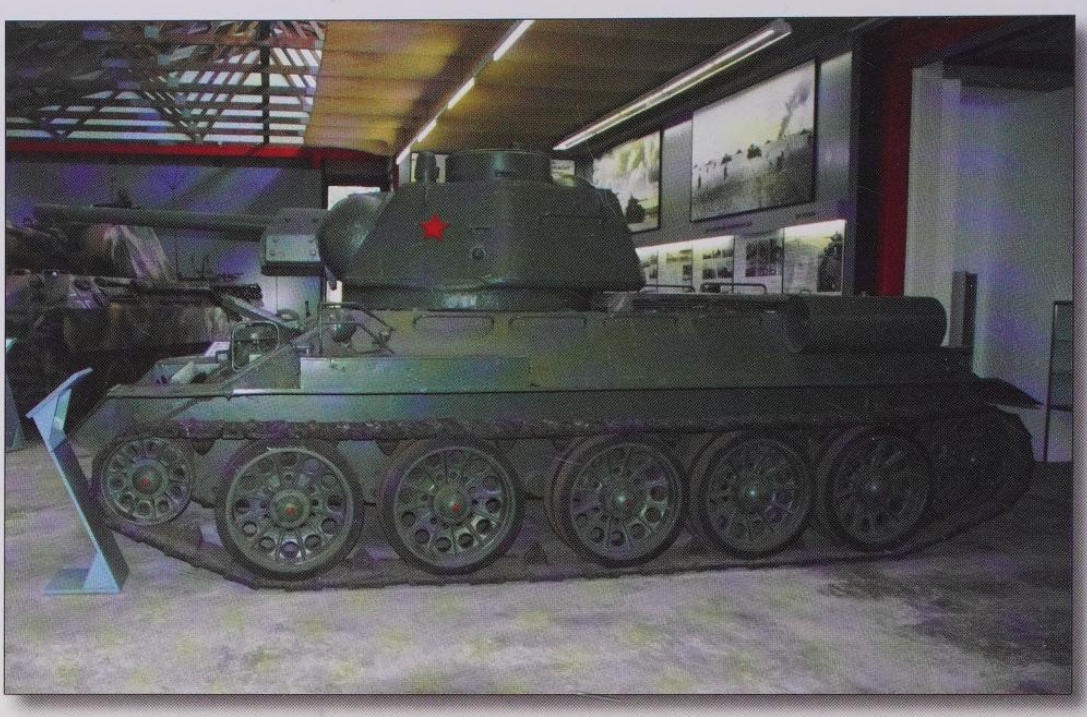
(PS)





T-34 with pressed turret preserved at the Vojenski Technicki Muzeum at Lesany, near Prague.

(PS)



T-34 with hexagonal turret with commander's cupola at the museum in Munster. This vehicle was by the East German Nationale Volksarmee and has many post- war modifications.

(G. Papadimitriou)

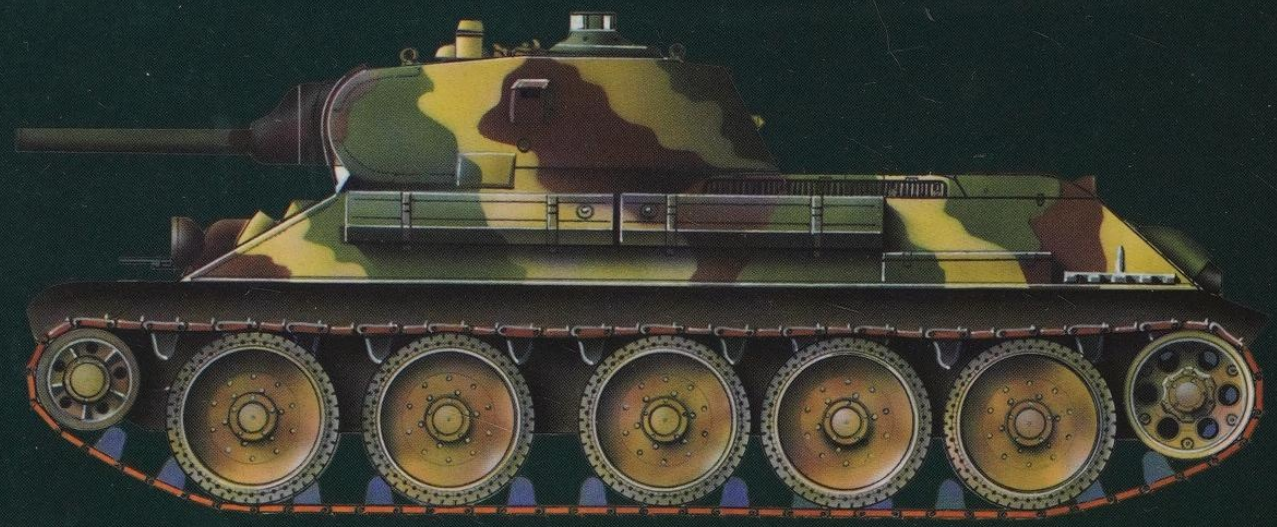
T-34 with hexagonal turret preserved at the Poznan citadel museum.

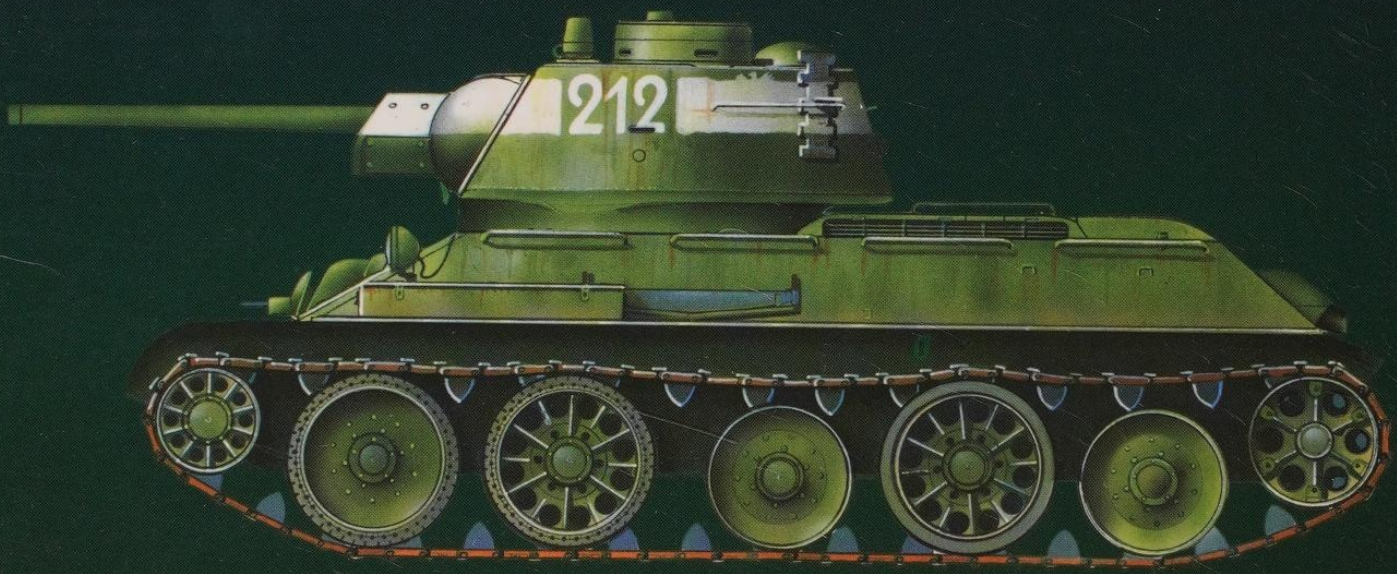
(P.S.)

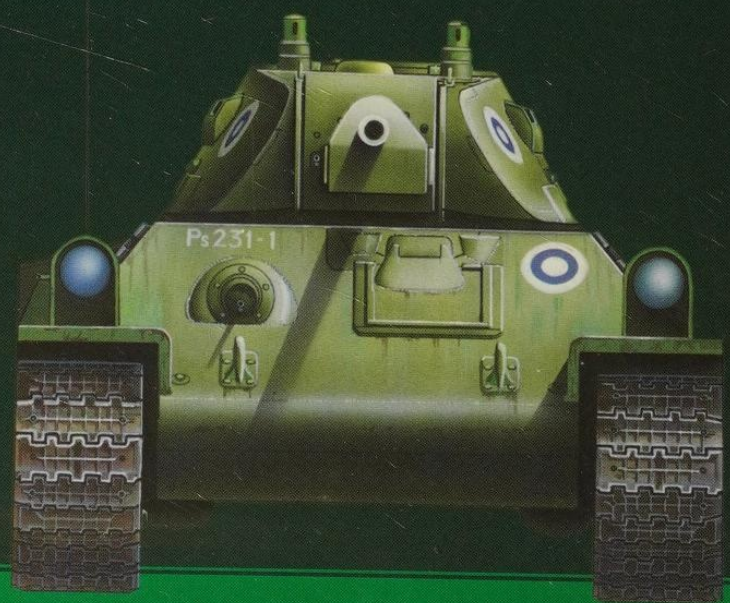
T-34 with hexagonal turret preserved at the museum in Drzonow.

(P.S.)

The T-34 was possibly the best medium tank of WW2, and was a major influence on all subsequent tank designs. It served in huge numbers with the Soviet Army and its allies, and was also used by their enemies! This book describes the colours and markings applied to the T-34/76 in service with all major users, including unit and tactical markings, individual names and insignia, and air recognition features. Profusely illustrated with photos and colour profiles, this is essential reading for armour enthusiasts and modellers.







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